

“BAYERISCHE MOTOREN WERKE AG”

COMPANY REPORT

“AUTOMOBILE INDUSTRY”

4 JANUARY 2021

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The Green Wave on the Luxury Automobile Industry.

The fight for the New Green Market Trend

- BMW has been a company that has pushed innovation to its customers for adapting to the new market trends and keep fulfilling their expectation for high quality standards.
- BMW has been a company that has resisted the COVID 19 crisis despite the negative trend of the market. Part of this recovery was caused by the opening of the Chinese market after the lockdown caused by the virus. Proven that one of its strongest market it is still dynamic and growing.
- BMW long-term R&D spending ratio is 5%-5.5% of group revenues, this translates in more than €30 billion by 2025. This level of R&D spending will provide BMW the necessary tools to adapt to the new market trends and remain one of the leaders in the premium automobile segment.
- BMW strategy for the new market trend is to include by 2023 in its production line 25 electrified models and at least 13 fully electric. Further, by 2025 the 33% of the European new vehicle fleet will be electrified.

Company description

Bayerische Motoren Werke Aktiengesellschaft, Better recognized as BMW AG is an automobile company, that is main purpose is to develop, produce, sell premium automobiles and offering financial services for their products acquisition. Until today, the company remains as the second premium automobile manufacturer with a strong and competitive global market share.

Recommendation: BUY

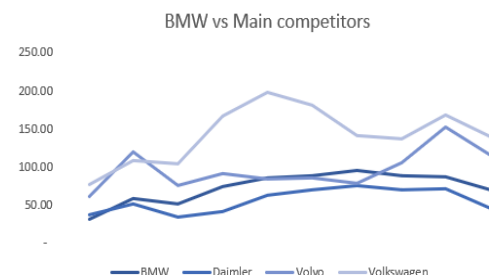
Price Target FY21: 77.43 €

Price (as of 4-Jan-21) 72.23 €

Reuters: BMW.DE

52-week range (€)	36.6-77.31
Market Cap (€m)	43,482
Outstanding Shares (m)	601.99
Shareholders return (%)	11.07

Source: Refinitiv Eikon, Annual report and Analysts estimates



Source: Refinitiv Eikon

(Values in € millions)	2019	2020E	2021F
Revenues	104,21	95,364	88,67
EBIT	7,411	3,623	6,668
Net Income	4,328	4,626	5,778
EPS	7.01	7.68	9.60
ROIC	3.10%	1.86%	3.79%
Automobile sales	2.5	2.2	2.4
Dividends	2.50	2.25	3.00

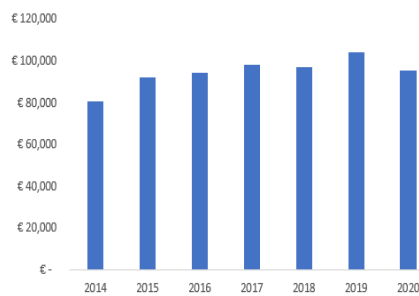
Source: Annual report and Analysts estimates

Table of Contents

1. COMPANY OVERVIEW.....	4
1.1. BUSINESS UNIT	4
1.2. MANAGEMENT BOARD.....	5
1.3. OWNERSHIP	6
2. THE INDUSTRY	6
2.1. OVERVIEW	6
2.2. SALES IN THE INDUSTRY	8
3. MACROECONOMIC OUTLOOK.....	9
4. PERFORMANCE	9
4.1. MARKET RETURN	9
4.2. DIVIDEND YIELD.....	10
4.3. PROFITABILITY	10
5. SWOT ANALYSIS.....	11
5.1. STRENGTHS	11
5.2. WEAKNESSES	11
5.3. OPPORTUNITIES.....	12
5.4. THREATS.....	12
6. PORTER´S STRENGTHS.....	13
6.1. POWER OVER CUSTOMERS	13
6.2. RIVALRY AMONG COMPETITORS	14
6.3. POTENTIAL OF NEW ENTRANTS INTO THE INDUSTRY.....	14
6.4. SUBSTITUTE PRODUCTS.....	14
6.5. POWER OF SUPPLIERS	15
7. VALUATION.....	15
7.1. INTRODUCTION.....	16
7.2. METHODOLOGY.....	17
8. VALUE DRIVERS OF BMW	18
8.1. SALES GROWTH RATE METHODOLOGY	18
8.2. SALES	20
• 8.2.1. 2020´s Q4 Forecast.....	20
• 8.2.2. Automobile sales	20
• 8.2.3. Motorcycle sales.....	23
• 8.2.4. Financial services.....	23
• 8.2.5. Research & Development.....	23
8.3. OPERATING INVESTED CAPITAL AND CAPEX.....	24
8.4. ESG	25
• 8.4.1. Summary.....	25
9. WACC.....	26
9.1. COST OF EQUITY	26

• 9.1.1. <i>BETA</i>	26
• 9.1.2. <i>Market returns, risk free and market premium</i>	26
9.2. COST OF DEBT.....	26
10. MULTIPLES VALUATION.....	27
11. SCENARIO ANALYSIS	28
12. SUMMARY	28
APPENDIX	31
1. FINANCIAL STATEMENTS AUTOMOBILES	31
2. FINANCIAL STATEMENTS MOTORCYCLES.....	32
3. FINANCIAL STATEMENTS OTHER ENTITIES	33
4. FINANCIAL STATEMENTS FINANCIALS	34
5. MULTIPLES VALUATION	35
6. SCENARIO ANALYSIS	35
REPORT RECOMMENDATIONS	36

Figure 1: BMW Group revenues since 2014.



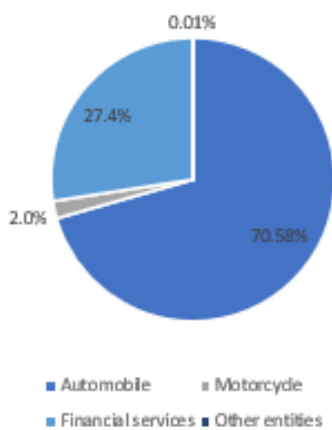
Source: Annual 2019 BMW Report

1. Company Overview

Bayerische Motoren Werke Aktiengesellschaft (BMW AG) is a German multinational company with its headquarters in Milbertshofen, Munich, Germany. It was founded in 1916 with the name of Bayerische Flugzeugwerke AG (BFW), transitioning in 1917 as Bayerische Motoren Werke G.m.b.H, and finally becoming Bayerische Motoren Werke Aktiengesellschaft in 1922. BMW AG develops, produces, and sell premium vehicles, motorcycles, and Financial services in more than 140 countries with sales of more than 2,2 million vehicles, 161,000 motorcycles and 1,8 million leasing and credit financing contracts in 2020. From 2014 to 2019 the Group revenue has grown at a CAGR of 5.32%. The analysts expected that in 2020 being the revenue could decrease in 8.49%, caused by the current Covid-19 pandemic.

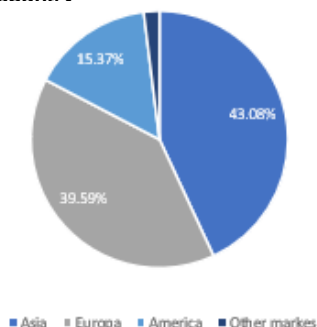
1.1. Business Unit

Figure 2: Revenue by BU



Source: Annual 2019 BMW Report

Figure 3: Revenue Q3 2020 by country



Source: Q3/ 2020 BMW Report

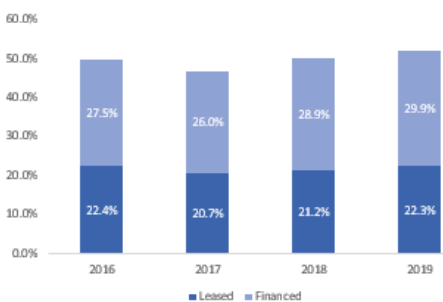
The Business units of the group are divided in Automotive, Motorcycles, Financial Services and Other entities. The main business unit is the Automotive segment representing 70.58% of the overall revenue of the group in 2020. The Automotive segment is divided in three brands, BMW, Mini and Rolls Royce with the BMW brand being the insignia with more than 1,9 million vehicles sold representing almost 83% of the total vehicles sold, Mini with more than 277,000 units sold and Rolls Royce with 3,600 units sold in 2020. Compare to 2019 figures BMW deliveries are expected to decrease in approximately 11%, Mini in 20% and Rolls Royce in 30% this was majority attributable to the Covid-19 pandemic. In addition, according to the analysts' calculations, from 2014 to 2019 the Automotive segment revenues has grown at a CAGR of 4.05% with a decrease of 16.93% in 2020.¹

As of the third quarter of 2020 the biggest market for the Automotive segment is Asia with 705,789 units or 43.08% of the total units sold, where China represents 79.40% of the total Asian market with 560,367 units. Europe comes in second with 648,494 units or 39.59% of the total units sold, Where Germany and UK represent 31.37% and 18.30% respectively of the overall European market.

Regarding the Motorcycles segment, in 2020, 161,361 units are expected to be sold that is a decrease of 7.88% compare to 175,162 units in 2019. Despite the decrease in units sold in 2020 (mainly related to the Covid-19 pandemic), the units have been increasing 7% in average from 2014-2019, with Germany and France being their biggest markets with a 25% (15% and 10% respectively) of total units

¹ BMW Q3 REPORT: https://www.bmwgroup.com/content/dam/grpw/websites/bmwgroup_com/ir/downloads/en/2020/q3/Q3_2020_BMW_Group_EN_Online.pdf

Figure 4: Financial Services



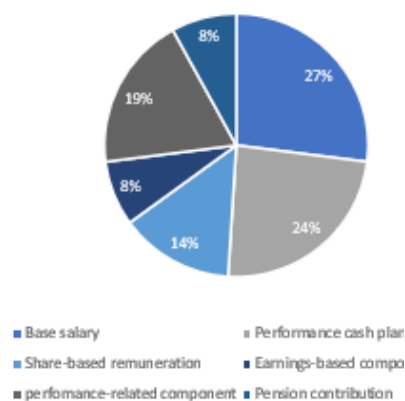
Source: Annual 2019 BMW Report

sold in 2019. In addition, revenues have grown for that same period at a CAGR of 7.12%.

The Financial services segment main function is leasing and credit financing for its customers. From 2015 to 2019 the total contract portfolio has grown at an average of 6.08%, and as of September 30 of 2020 the total contract portfolio was 5,936,975. Moreover, new contracts have increase at an average of 5.89%. Out of these new contracts, 52.2% vehicles were leased and financed (22.3% and 29.9% respectively) by this segment in 2019, with the EMEA region being the biggest representing 35.5% of the total vehicles financed. Revenues in this segment have been growing at a CAGR of 7.52% from 2014 to 2019 that is bigger than the Automotive and motorcycles segment²

1.2. Management Board

Figure 5: Management Board Compensation.



Source: BMW Compensation of the board of management and the supervisory board 2019

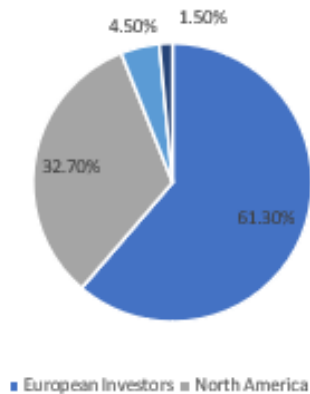
The management board is composed of seven members with Oliver Zipse being the current chairman since the stepdown of Harald Krüger in August 15 of 2019. Under Harald Krüger tenure, BMW Group lost the global lead in premium cars to competitors Daimler AG in 2016, As well as facing criticism about his failure to implement new models and strategies to the new era of electric/electrified vehicles. Currently, Oliver Zipse has the titanic task of regaining BMWs global lead in premium cars and implement new models and strategies to the new electric/electrified era, in an environment of low economic growth and high unemployment with Covid-19 still lingering around. The analysts believe Oliver Zipse will be capable to adapt and implement the best strategies for BMW mainly because of three reasons. First, he has been working for BMW since 1991 and before being appointed CEO he was head of production. Second, during the Covid-19 pandemic BMW has been showing better results than expected, especially in Q3 where deliveries of vehicles increase 8.6% compared to 2019 Q3. Third and most important, by 2023 BMW will have at least 25 electrified models including at least 13 fully electric cars, and in addition by 2025 33% of the new European vehicle fleet will be electrified and in 2030 it will be 50%³.

The management board compensation comprises fixed and variable cash elements as well as a share-based component. Fixed remuneration consists of base salary (27%) and variable remuneration comprises three components, Performance cash plan (24%), Share-based remuneration (14%) and Bonus which

² BMW Annual Report 2019: https://www.bmwgroup.com/content/dam/grpw/websites/bmwgroup_com/ir/downloads/en/2020/gb/BMW-GB19_en_Finanzbericht.pdf

³ BMW Compensation of the board of management and the supervisory board <https://www.bmwgroup.com/en/company/company-portrait.html#acedown-520279435>

Figure 6: Ownership by Region



Source: BMW Compensation of the board of management and the supervisory board 2019

is split into earnings-based component (8%) and performance-related component of (19%). Lastly, the pension contribution amounts to 8%.

1.3. Ownership

BMW AG ownership is currently held in majority by the Quandt family (46.7%), Stefan Quandt holds 25.8% and Susanne Klatten 20.9%. Institutional investors hold the remaining shares, Harris Associates LP (2.99%), Norges Bank Investment Management (1.66%), The Vanguard Group, Inc. (1.64%), Dodge & Cox (1.55%), Flossbach von Storch AG (1.25%), Deka Investment GmbH (0.79%), Baillie Gifford & Co. (0.73%) and BlackRock Asset Management Deutschland AG (0.73%). Geographically, 61.3% of the equity is held by European investors, followed by 32.7% by North American investors, with Asia and the rest of the world holding 4.5% and 1.5% respectively.⁴

2. The Industry

2.1. Overview

The crisis that this virus created according to Forbes magazine moved the world into a step of 5 years into the digital economy. The pandemic has pushed to a new market strategy to all companies from different sectors, making the migration to digital fields and contactless economy an important fact for company survival.

Across Europe, engagement with industries through online channels has increased by an average of 13 percentage points.

More consumers are visiting a growing number of industries online in every country surveyed.

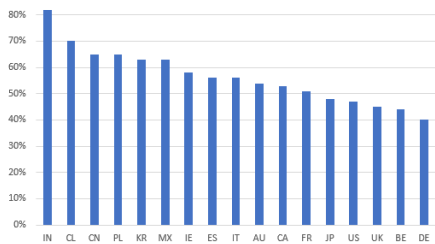


Figure 7: Growth of ecommerce in Europe during the great lockdown.

Source: McKinsey & Company “Reimagining the auto industry’s future: It’s now or never”

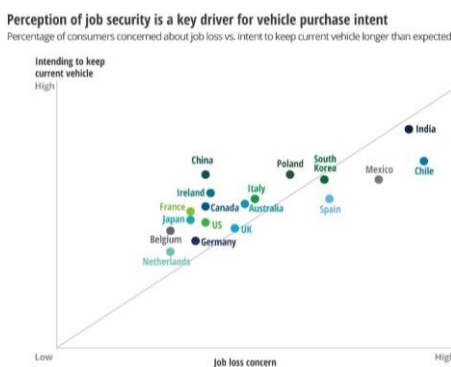
⁴ BMW Compensation of the board of management and the supervisory board (2019): <https://www.bmwgroup.com/en/company/company-portrait.html#acedown-520279435>

Figure 8: Global Consumers intending to push out their next vehicle purchase.



Source: Deloitte “How the pandemic is changing the future of automotive”

Figure 9: Perception of Job Security



Source: Deloitte “How the pandemic is changing the future of automotive”

The automobile industry has not been an exception of this, since car sales have plummeted in record levels the innovation had to arrive by the way of selling their products. As the reader might be aware during the lockdown business were closed, interfering with one of the most important marketing strategies of car selling: face to face interaction and contact with the product. Due to this, the car agencies as other business had to look for new marketing strategies to keep their products on float.⁵ Part of this innovation has been contactless car driving test where the vehicle has passed through a disinfection process to avoid a COVID-19 infection. This form of sales will represent a high peak for cars and at the same time a business opportunity for reducing marketing and sales cost, since in a near future this contactless technology will represent a reduce of sales employees and commission, not forgetting that also digital commerce has represent a huge decrease in the ways how commerce interacts by the substitution of physical stores and staff by new market trends. As it can see on the following graph by McKinsey Therefore, car industry will evolve to this new digital era and in a not far away future evolve its traditional channels to the new market trends. But, for this to happen car companies will need to make future alliances with tech companies who could simplify the access to technology and accelerate the process.

Despite these new trends on the market, the economy is facing an incredible slowdown that has pushed consumers to think twice before buying a car, according to the study almost half of US consumers (47%) are planning to keep their current vehicle longer than they originally expected. Similar trends are being detected in other big automotive markets like China (65%), South Korea (63%), and Japan (48%).⁶

Another factor that will impact during the 2021 will be the job security that the market can offer to the consumers, as it is visible on the following graph this correlation will be important at the moment of forecasting sales for 2021 and 2022 which is the year that the economy is expecting to face a recovery to pre-pandemic standards, leading into a slow recovery of car sales in the world and at the same time to look for new marketing strategies even after the vaccines will be distributed along the world, this process will be slow, which will lead to a possible scenario of more restrictions after the winter and during the beginning of the spring. Since the vaccination process across Europe and America will continue until the end of the first semester of 2021.

⁵ McKinsey & Company “Reimagining the auto industry's future: It's now or never” (2020): <https://www.mckinsey.com/industries/automotive-and-assembly/our-insights/reimagining-the-auto-industrys-future-its-now-or-never>

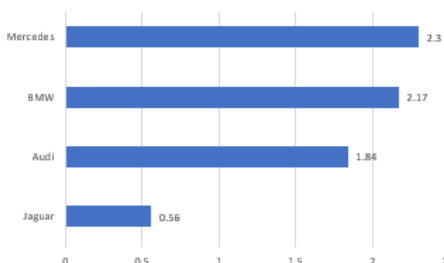
⁶ Deloitte “How the pandemic is changing the future of automotive” (2020): <https://www2.deloitte.com/us/en/insights/industry/retail-distribution/consumer-behavior-trends-state-of-the-consumer-tracker/future-of-automotive-industry-pandemic.html>

Not everything is bad news for the industry, since also the COVID-19 has raised the interest of new consumers to acquire a vehicle after the situation becomes more stable for everyone. According to a study from Deloitte people are considering keeping maintaining the physical distance, which will lead into a consumption of more vehicles for example according to the study 79% of consumers in France, 74% in the United States, 69% in the United Kingdom, and 63% in South Korea are considering acquiring a vehicle, since they can consider a safety and hygienic measures compared with the use of public transportation or pooling. The main challenge for this trend will also be the behaviour that consumers will take now of acquiring a new vehicle, since they pockets will be hit, they might go for a used vehicle, affecting to the manufacturing of new cars⁷.

Besides the new sales opportunities and market disruptions, the car industry will also have to face other obstacles for their survival. The car industry is facing a green revolution, which is pushing for new alternatives for reducing car emissions to the atmosphere and traffic from big cities, where they have developed new rules to take cars that work with fuel combustion out of the roads and being substituted by carpooling services or green energy vehicles. Therefore, car companies have been pushed into a competition of developed new green technologies to keep their business moving according to the market trends and government requirements. Therefore, this could be a contrast to the pre-owned market and consumers will take the opportunity to buy vehicles that in a short term will not represent an increase in fuel consumption and taxes (caused by the government regulation).

2.2. Sales in the Industry.

Figure 10: Luxury sales worldwide 2019



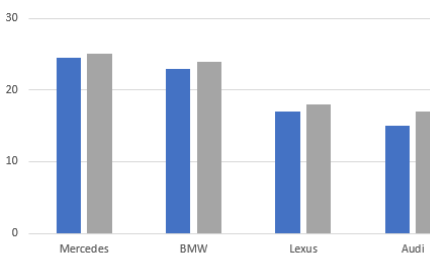
Source: Bloomberg “Luxury Brands Are the Winners in the U.S. Auto Market”

In 2019 the following companies were considered the most important luxury cars sellers on the world (Mercedes, BMW, Audi and Jaguar). This proves BMW (only BMW cars the numbers exclude rolls Royce and mini cooper) is having an important market participation for the luxury cars selling. The firm is just above its German peer Audi and followed by Mercedes Benz. Showing the strength of the German producers on this special field and the trust that the consumers have for German automobile industry.

According to Bloomberg numbers the Car industry in the United States was facing a slowdown in consumption in 2018, but there was an exception to this trend. This exception was the luxury cars manufactures who were increasing their sales despite the negative panorama. Showing that car luxury tends to follow the trend of luxury goods during crisis. Even though their demand tends to be elastic, their

⁷ Deloitte “How the pandemic is changing the future of automotive” (2020): <https://www2.deloitte.com/us/en/insights/industry/retail-distribution/consumer-behavior-trends-state-of-the-consumer-tracker/future-of-automotive-industry-pandemic.html>

**Figure 11: Luxury sales in USA
2018 vs 2017**



Source: Bloomberg “Luxury Brands Are the Winners in the U.S. Auto Market”

high social class niche continues consuming them. Which makes luxury cars industry less volatile compare to regular car manufactures which are focused on a middle class that tends to be volatile to crisis and price changes. It is also noticeable how BMW in 2018 is still in second place for the American Market, which also contrast to the worldwide 2019 data where the company keeps being the second most consumed brand on this field.⁸

3. Macroeconomic Outlook

The Covid-19 pandemic represents the deepest recession since WW2, even worse than the Great financial crisis in 2007-2008, representing a massive shock to the global economy. GDP in advanced economies is projected to shrink -5.8% in 2020. The euro zone is expected to be have the highest contraction (-8.3%).⁹ In emerging economies (excluding China), GDP is expected to contract -5.7%, with Asian economies being the hardest hit, especially India, with an expected contraction of 10.3%, this is because countries in this area are still trying to take the pandemic under control. Despite Covid-19 being originated in China, this is the only country that this year will experience GDP growth (1.9%). Is worth to mention that despite all the fiscal stimulus provided by majority of the governments, private consumption is expected to decline by a historical 8% in 2020, with industries such as Automobiles, Restaurants and Tourism being the hardest hit. This is particularly important for the Euro area due to the heavy exposure to these industries, implying negative net exports in 2020.

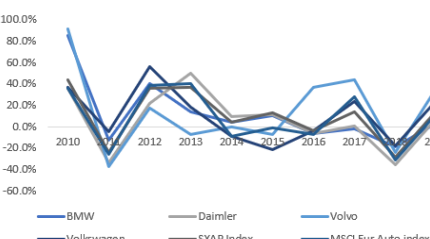
For 2021 global GDP is projected at 5.2%, with inflation picking up in most countries and a bullish year for financial markets. Further, GDP growth is expected to growth at a slower pace to 3.5% in the medium term (2022-2025), and private consumption is expected to reach pre-pandemic levels in 2022.

4. Performance

4.1. Market return

In the last decade (2010-2019) BMW stock return has outperformed the market, delivering an annual average return of 11.8%, compared to 10.6% of the Stoxx 600 Automobiles (SXAP Index) and 8.2% of the MSCI Europe Automobiles index.

Figure 12: Stock returns for BMW and competitors since 2010



Source: Refinitiv Eikon

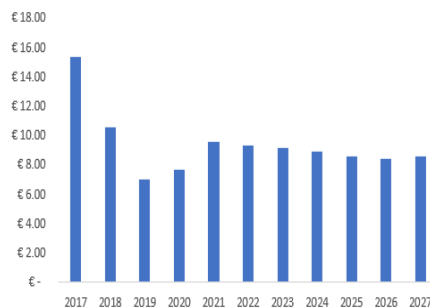
⁸ Bloomberg “Luxury Brands Are the Winners in the U.S. Auto Market” <https://www.bloomberg.com/news/articles/2018-03-01/luxury-brands-take-victory-lap-as-mass-market-auto-sales-sputter>

⁹ International Monetary Fund (2020): <https://www.imf.org/en/Publications/WEO/Issues/2020/09/30/world-economic-outlook-october-2020>

Further, the stock has also delivered higher returns than those of its direct German competitors, Daimler (6.2%) and Volkswagen (10.4%).¹⁰

4.2. Dividend yield

Figure 13: Historical and forecasted EPS for BMW



Source: Refinitiv Eikon

Since 2015, BMW Group dividend have yielded an average of 4.04%, just lower than Daimler (4.57%) and Volvo (5.32%) but bigger than Volkswagen (2.22%). Nevertheless, total annual equity return (capital gains + dividend) of BMW is still higher (15.89%) than those of the of its German competitors Daimler (10.78%) and Volkswagen (12.59%). It is important to mention that despite the fact dividends paid (Euro amount) have declined in 2019, the dividend yield has remained constant, which is what the analysts expect to continue further.¹¹

BMW Group EPS has been declining in the last years from €12.06 in 2015 to €7.01 in 2019, this is mainly explained because cost of goods sold has been increasing, meaning profitability of the company have been declining. For 2020, the analysts expect the EPS to be €7.68, and moving forward our calculations suggest an average EPS of €8.38.¹²

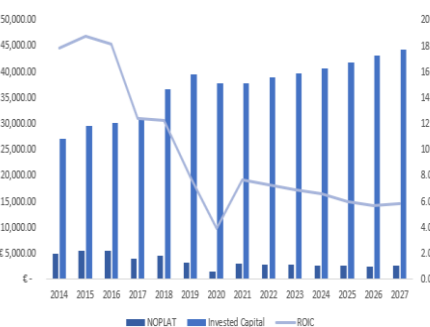
4.3. Profitability

As said before, the automobile industry is experiencing a disruptive and innovating period. Following these trends, the path is correlated with a high increasing of expenditures, which are translated into a declining of profitability Part of this is the EBITDA Margin declined by 6.2% from 2015 (19.20%) to 2019 (13%). A similar trend is seeing on the ROIC, declining on the same period by 2.07%. Other index affected by these movements on the market is the return on capital employed, which plumed around 43.20%.

Despite the decreasing of these main ratios, the profitability of the company remains above the industry and from its direct competitors, with an EBITDA Margin higher than the average by a 17.46%, in contrast with its direct competitor's such as: Daimler (14.36%), Volvo (13.80%) and the average of the industry (15%). By this, the company has solid data to demonstrate why its stocks have outperformed on the index and its German competitors.

By mentioned the information above, the analysts believe that BMW will remain as one of the most profitable companies in the industry. Therefore, the analysts consider that BMW will deliver excess of returns above its cost of capital. This is sustained by having a ROIC in the automobile segment averaging 6.54% from

Figure 14: Historical and Forecasted NOPLAT, Operating Invested capital and ROIC for BMW automobile segment



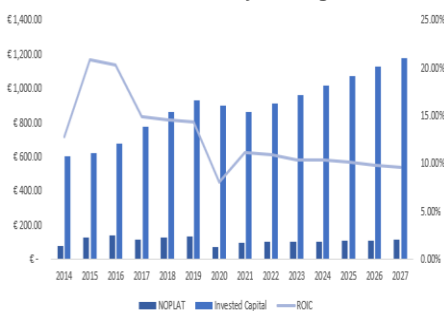
Source: Analyst Estimates

¹⁰ Refinitiv Eikon Platform

¹¹ Refinitiv Eikon Platform

¹² BMW Annual Report 2019: https://www.bmwgroup.com/content/dam/grpw/websites/bmwgroup_com/ir/downloads/en/2020/gb/BMW-GB19_en_Finanzbericht.pdf

Figure 15: Historical and Forecasted NOPLAT, Operating Invested capital and ROIC for BMW motorcycle segment



Source: Analyst Estimates

2021 to 2027 and a ROIC in the motorcycle segment averaging 10.34% for the same period, which is above the WACC of 4.78%.

A similar trend would be observed on the financial segment, which according to the analysts the segment has delivered on average a 17.86% return on equity. The number as the figures mentioned above, it is still better than its direct competitors, such as: Daimler (15.96%), Volvo (14.30%) and Volkswagen (10.70%).

5. SWOT ANALYSIS

5.1. Strengths

BMW is a firm that has a huge investment in innovation for its car technology. Every year the investment is around 5%-5.5% of its total revenues.

BMW is a firm with a rate of “A” for long term investments by S&P and “A2” by Moody’s, which shows that the firm is quite stable and capable of paying to its creditors their investment without financial distress.¹³

The firm has shown a growth in regions with high potential markets, like the United States and China, therefore it has a high potential market for expanding its products and technologies outside of Europe.¹⁴

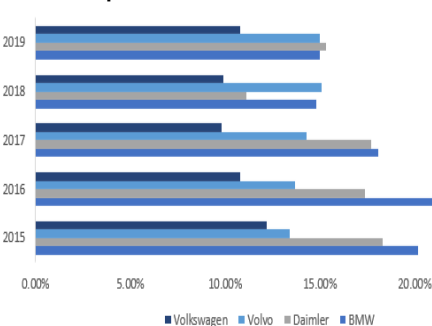
BMW is positioned as a luxury brand and therefore aspirational, which makes it more valuable and has helped to continue in markets where there’s high income like North America and with high social mobility, therefore more people can access to these aspirational products.¹⁵

BMW had a powerful growth after the COVID-19 lockdown recovery in Q3, increasing its revenues after the drastically fall from Q2 thanks to the Chinese re-opening of the company, showing the huge importance and potential growth of BMW’s sales.¹⁶

5.2. Weaknesses

BMW has been doing several adjustments on its corporate structure, by reducing administrative expenses and reducing its workforce due to the current COVID-19 situation. This could be a signal for the company to maintain its cash flows after

Figure 16: Return on equity for BMW and competitors since 2015



Source: Annual 2019 BMW Report and competitors

Figure 17: Debt rating from Standard & Poors and Moodys for BMW

BMW Debt rating		
	S&P	Moody's
Long-term rating	A	A2
Outlook	Negative	Negative
Short-term rating	A-1	P-1

Source: Refinitiv Eikon

¹³ Refinitiv Eikon Platform

¹⁴ BMW Annual Report 2019: https://www.bmwgroup.com/content/dam/grpw/websites/bmwgroup_com/ir/downloads/en/2020/gb/BMW-GB19_en_Finanzbericht.pdf

¹⁵ World Economic Forum The Global Social Mobility Report 2020 Equality, Opportunity and a New Economic Imperative http://www3.weforum.org/docs/Global_Social_Mobility_Report.pdf

¹⁶ Reuters BMW Q3 profit rebounds on china demand for luxury cars <https://www.reuters.com/article/bmw-results/bmw-q3-profit-rebounds-on-china-demand-for-luxury-cars-idUKFWN2HQ0DZ.?edition=redirect=ca>

the “Great lockdown” making investors and banks taking a more conservative approach regarding the company situation.

BMW is facing a small decrease in revenues around Germany, after a profitable year in 2017 the numbers have been decreasing along.

The BMW profitability is still in positive ground, but the company has increased its expenses to make the company more competitive to the current market demands, therefore the profitability has decreased compare to previous years.¹⁷

5.3. Opportunities

Governments are moving into more sustainable and green economy, therefore governments around the globe have started to warn about warnings of combustion vehicles. Example: UK plans to band car combustion cars for 2030.¹⁸

The new normal according to McKinsey group represents a new opportunity for automobile industry to improve their distribution and sells channels. The pandemic has demonstrated the importance of having a diversifying chain supply to keep the business operating.

The new normal has pushed into a new digital revolution, according to McKinsey this could lead to a new way of selling cars outside the traditional retail sale and reducing costing of sales by having contactless driving test.¹⁹

During the time of crisis company can take a zero-based income statement, therefore firms can take a budget from scratch and put more cost controlling cost that could allow to amortize the effects of the new COVID-19 crisis and improve revenues along with cash flows.²⁰

5.4. Threats

BMW is facing a legal demand in the united states for made false and misleading statements by taking a "bank" of retail vehicle sales from its inventories and reporting it as sales when they were not.²¹

COVID 19 has let a financial crisis that has hit important markets for BMW like Europe where current lockdowns are being held down due to the current increase

¹⁷ **BMW Q3 REPORT:** https://www.bmwgroup.com/content/dam/grpw/websites/bmwgroup_com/ir/downloads/en/2020/q3/Q3_2020_BMW_Group_EN_Online.pdf

¹⁸ **BBC NEWS “Ban on new petrol and diesel cars in UK from 2030 under PM's green plan” (2020)** <https://www.bbc.com/news/science-environment-54981425>

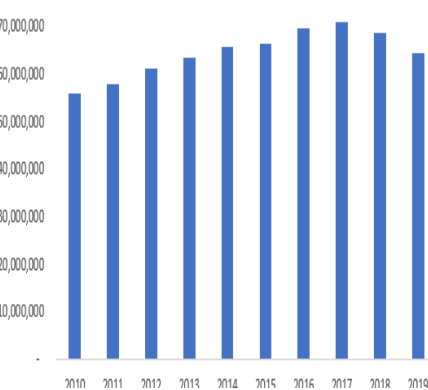
¹⁹ **McKinsey & Company “Reimagining the auto industry's future: It's now or never” (2020):** <https://www.mckinsey.com/industries/automotive-and-assembly/our-insights/reimagining-the-auto-industrys-future-its-now-or-never>

²⁰ **BMW Q3 REPORT:** https://www.bmwgroup.com/content/dam/grpw/websites/bmwgroup_com/ir/downloads/en/2020/q3/Q3_2020_BMW_Group_EN_Online.pdf

²¹ **U.S Security and Exchange Commission 2020:** <https://www.sec.gov/news/press-release/2020-223#:~:text=The%20Securities%20and%20Exchange%20Commission,investors%20in%20several%20corporate%20bond>

223#:~:text=The%20Securities%20and%20Exchange%20Commission,investors%20in%20several%20corporate%20bond

Figure 18: Global automobile sales since 2010.



Source: Organisation Internationale des Constructeurs d'Automobiles

of infections around the continent, leading to a possible slow recovery and bad results for the end of Q4 FY20 and Q1 FY21.²²

Car industry has been showing a decreasing historical tendency, which could be causing a problem in a mid and long term for the industry, affecting even further plans of expansion from automobile industry firm and decreasing of market share.²³

Unemployment rates around the world are still in high levels, letting into a more conservative expending from customers and a more complicated social mobility, which could affect the value of BMW as an aspirational brand since consumers will tend to allocate their resources into savings or other important expenses due to the current job and wage cuts in high management positions around the world.²⁴

6. Porter's strengths

6.1. Power over customers

BMW according to its R&D development, they have been investing in developing greener automobile technology for its customers to keep the brand as a luxury manufacturer. Focusing in reducing emissions and developing drivetrain systems. At the same time and for being a direct competitor to Tesla's autonomous driving, the company is also investing part of its R&D expenses on this field. Other strong fact from BMW to break this barrier is the overlook of customer service that the company is handling to exceed the expectations of customers, which puts BMW on the correct track for starting to gain market share in the new future of the automobile industry. A strong example of how customers have an incredible loyalty to BMW is the incredible Q3 that the company had during the 2020 pandemic, impulse by the Chinese market, this proves that despite the economic situation after the lockdown's customers tend to continue buying a solid positioned brand and that despite the economic panorama the high-income niche to whom the product is focused sees BMW as an investment worth doing. By this the analysts can show that even though BMW is losing grown on its domestic market, the complex diversity of its supply chain for supplying customers and expand the brand into new markers helps to continue with the increasing in revenues and profitability, giving BMW certain power to keep control of its prices, and making the company profitable.

²² CNBC "Germany looks set to extend lockdown into December as infections remain high" <https://www.cnbc.com/2020/11/23/germany-looks-set-to-extend-lockdown-into-december.html>

²³ Organisation Internationale des Constructeurs d'Automobiles (2019) https://www.oica.net/wp-content/uploads/pc_sales_2019.pdf

²⁴ NY Times "Unemployment Claims Rise as Economic Worries Grow"(2020) <https://www.nytimes.com/2020/11/19/business/economy/unemployment-claims.html>

6.2. Rivalry among competitors

One of the main threats of BMW for the near future is the high expenses on marketing that Tesla is having for the green technology in automobiles. A Tesla car on its basic model ranks from 37k euros up to 80k, and there are plans to create a cheaper version of the cars for making this technology affordable. This new competitor to the market can represent a risk for BMW's sales as an aspirational brand since Tesla is managing a strong marketing campaign and is a market leader on the green automobile industry, causing a huge entrance barrier for other competitors since their core business is this technology.

6.3. Potential of new entrants into the industry

Other companies are also developing new car technology for increasing their market share and adapt to the new government and customers' requirements. BMW has been building strong barriers by developing intellectual property and continuing to patent new technology for making its products more competitive and offering to their luxury niche the most updated technology on the market, making it difficult for other companies with low sales to continue the pace of innovation or setting high standards along with Tesla for penetrating this market, therefore low key car manufacturers will find a struggle to deal with the fast moving changes of the sector. At the same time BMW is having a set economy in scale with better supply chain and modernizing their plants or buying its joint ventures in countries with strong market regulations (example of this is the acquisition of the BMW branch from the state own company manufactured in China for avoiding increasing the price of manufacturing channels), this move was also a smart one for reducing the customers switching cost. Which puts BMW in China as a company that is looking forward to conquering the market. Same situation applies to Americas region, which is led by American companies, BMW has looked for ways to generate luxury cars with local supply materials and reducing exporting fees to other of its more profitable markets and keep the growing pace, which could be harder for other companies trying to expand their portfolio brand to a luxury market even harder.

6.4. Substitute products:

Cars are becoming a problem in large cities due to the increasing of population, restriction laws to reduce carbon emissions and high taxes derived from the lack of space could lead into a problem for automobile industry and for consumers to reduce their purchase of cars and move to other more efficient mobility. Even for

high income, this trend could lead to use high profile luxury cars as transportation to avoid dealing with the high taxes and lack of space.

Other products for those who are doing social class jumping could be smaller cars and cheaper electrical versions (pushed by the new green laws for reduce carbon emissions) that could help them to avoid paying the same taxes mentioned above. Other could opt to continue in big cities the movement by public transportation and other digital platforms for urban areas like: uber, DIDI, Bolt, etc.... which are quite popular among the millennial and z generations, therefore in a long term this change of habits could represent a treat to BMW, as it will be described in the valuation part of the model where it is mentioned that the car manufacturing is experiencing a decrease of sales around the world.²⁵

6.5. Power of suppliers

BMW has a strong influence over its suppliers since is quite a big company who prefers to own its machinery instead of leasing it. At the same time, the supply chain from BMW is quite diverse, having manufacturing strategic points around the world include a recent opening of the most modern car manufacturer plant in San Luis Potosí, México. This project was developed to take advantage of the Mexican manufacturing market and free trade agreement between the three north American regions, an essential area for their sales growth. This kind of investments along with the possession of their own technology proves that suppliers have a limited effect on BMW, therefore the company cannot hardly be affected from threatening of price increasing by suppliers who would like to take an advantage as well to have additional costings for replacing suppliers who might like to increase their prices or reduce the timing of payment (pressuring the cashflow of the company). A good example of this strength over suppliers has been the incredible cost reduction that the company has done caused by the COVID-19 crisis. The company was able to reduce administrative cost and decrease the amount of its production volume to keep flowing their supply according to the demand of the market, at the same time it is noticeable that BMW increase considerably its account receivables (which can prove a power of negotiation with suppliers to delay payments and protects its cash flows).²⁶

7. Valuation

²⁵ McKinsey & Company “How shared mobility will change the automotive industry” <https://www.mckinsey.com/industries/automotive-and-assembly/our-insights/how-shared-mobility-will-change-the-automotive-industry>

²⁶ BMW Annual Report 2019: https://www.bmwgroup.com/content/dam/grpw/websites/bmwgroup_com/ir/downloads/en/2020/gb/BMW-GB19_en_Finanzbericht.pdf

7.1. Introduction

For valuation purposes, the company has been divided by business units. The company has 4 business (Automobiles, motorcycles, financial and other entities) and an eliminations section. To understand the complexity of BMW financial statements is essential to understand the commercial activity of the company.

It is important to point out that BMW has an extra division for making accessible their products called “Financial Services” which consist of acquiring certain part of the volume produce for selling it to its customer by using credit financing or leasing (this is a common tactic use by some big firms who prefer to follow this to update their fleet). By mentioning this, the company uses the financial entities division as bridge between customers and the core business of the company, which is not a surprise that the firm on this area has a high value of current receivables related to sales financing and leasing (consider as core business unit due to the financial, at the same time it is important to mention that according to BMW reports an average of 50% of automobile volumes are sold throughout this method. Therefore, these amounts impact on a direct way the total value of the cash flow for this division. A similar method is used by the company on its other entities’ division, which is where the company is allocating the holding companies of the group and is where the group is allocating most of its liabilities, therefore there is no surprise to see the other entities taking a high value in cash from the other divisions that might be impact due to the nature of the BMW sales model.

Other essential point to mention before getting into the financial method use of the company is to understand the eliminations part of the firm. This part of the financial report consists of the eliminations of the internal transactions done by the company. This section is an important part of the report since on average it equals to a 16% of the total revenues and the weight of each account (from balance sheet and financial statements), therefore the allocation of these revenues had to be considered for calculating the valuation of the company, as it was mentioned before BMW tends to buy part of its sales for leasing purposes. Therefore, the value of the eliminations was distributed according to the weight of the revenues (this was the most appropriate approach since the company does not give more information related to the origin of this figures). At the same time, it is important to consider that the value of the revenues will help us to reduce the internal sales that automobiles and financials entities, reflecting on the criteria of the valuation a real value of the firms. Finally, it is essential to mention that for understanding the total value of the company, the analysts have decided to consider the share price as a total from the values obtained from each business unit. As it was mentioned above

the company tends to sustain its business transactions by using every business unit as a bridge therefore the result from every BU might be under/over valued if analyzing them individually.

7.2. Methodology

Once having understood the complexity of the BMW the reader will be able to understand the financial valuation followed on this report. The firm was divided in four business units, therefore for automobile, motorcycles, and other entities the discounted cash flow method was chosen. This decision was taken due to the fact that these divisions (specially cars and motorcycles) require of big expenses in capital expenditures in order to operate and a huge investment in research and development in order to make their products more competitive in price and technology on the market, therefore it was essential to identify the value of the cash flows and see if BMW is keeping a moderate capex expenses according to the revenues that it generates and that this is bringing certain value and security to the company for facing financial distress. The values taken on each division were with the eliminations applied, since it is believed from the analysts criteria that this shows the correct value of the company since intercompany sales do not generate any kind of value to a firm's cash flow or business, especially financial impacts of new accounting regulations. For example, in year 2019 the reader could see in the valuation a big impact on property plan and equipment, caused by the IFRS 16 new risk transaction of leases from the lessor to the lessee, therefore the financial cost and impact of this movement was already reflected on the cash flows, showing the current situation of BMW in a near future²⁷. (See appendix for further information)

Cash flow to equity

For the financial services segment the analysts decided to use the cash flow to equity approach for evaluating the segment. One of the main reasons for using this valuation method instead of DCF (as it was done for the other divisions) is that one of the main purposes of this sector is to provide BMW's customers a credit financing and leasing flexibility. On this scenario, most of the assets in this segment are financial and not physical (receivables from sales financing correspond to 74% of the operating invested capital in this segment). By using this method, the analysts discount using the cost of equity rather than the WACC.

²⁷ BMW Annual Report 2019: https://www.bmwgroup.com/content/dam/grpw/websites/bmwgroup_com/ir/downloads/en/2020/gb/BMW-GB19_en_Finanzbericht.pdf

8. Value Drivers of BMW

8.1. Sales Growth Rate Methodology

The growth rate for 2021 and the following years (2022-2027) was calculated with a weight of three factor that the analysts considered essential for the future price of the share in 2021. These factors include for 2021:

- BMW recovery from the 2008-2009 financial crisis obtained from the financial statements of 2010 (the most catastrophic of the XXI century before the COVID-19 lockdown). This number was considered essential because it proves how BMW is likely to get recovered after an exogenous shock and gives a possible value of the results that could be seen in 2021²⁸. Which is why this was considered with a weight of 60% by the analysts; more than the 50% because the analysts considered that this might be the trend that the company will follow in 2021 after the Christmas lockdowns in Europe and Americas. In the case of Asia, the value was not considered because it became an outlier for the data that the analysts were using (it passed more than the 55% of the recovery), therefore by considering this value the growth rate for 2021 became quite high and unrealistic according to the analysts criteria. This was the only variable consider for only markets since the economic growth will vary from other regions. The three main regions where BMW has a strong presence has been separated because they represent an important part of the sales from the company.

- Other factor that was considered was the other analysts estimates growth rate of premium cars 2021, this is important for the analysts because by considering other estimates one can extract the expectation of the market in this segment. In addition, Premium automobile brands tend to follow different trends compare to mass consumption products according to the news and reports read during the market opening and online shopping trends by consumer. It is important to mention that BMW is a premium car brand, therefore the analysts consider that it not possible to put BMW with a correlation of growth of average car firms which are designed to a middle-class sector (since they are the most vulnerable to financial crisis) and that the brand is consider as an aspirational brand. The weight assigned to this growth was 30% since the analysts considered an important characteristic of the branding and property of the product²⁹.

²⁸ Forbes Magazine “Global Auto Sales Won’t Recover Pre-Coronavirus Highs Until 2023” <https://www.forbes.com/sites/neilwinton/2020/10/15/global-auto-sales-wont-recover-pre-coronavirus-highs-until-2023-report/?sh=7667376ce6b6>

²⁹ Statista “Projected worldwide light vehicle sales growth from 2019 to 2021” <https://www.statista.com/statistics/267128/outlook-on-worldwide-passenger-car-sales/>

•As a third and last important fact for this weighted valuation per region was the GDP growth rate expected for 2021. In the case of Europe, the information was obtained from the European commission. In the case of the Americas, it was considered the GDP growth of the united stated since 80% of the sales are focused on that region. For Asia, the economic growth was obtained by the IMF estimates for China since this country represents most of the sales of the region. At the same time, the analysts considered important the Chinese growth because it was one of the first countries to experience a post pandemic opening and it is showing the possible trends that the rest of the world will follow.

By considering the data above and the percentage of the weight the analysts obtained a growth rate of 9.13% for the company in 2021 as a possible recovery after the vaccine application plan that countries will follow across the world and will lead to a gradually opening of the economy and recovering of consumers fears to keep pushing the market up after an intense 2020.³⁰

For the period of 2022 to 2027 the rate decreased because the analysts believed that the market would continue with the trend that the regions were having before the COVID-19 situation. A fall in Europe since it was the trend that the company has been following since 2017 (which was the data in sales that was obtained on the region by calculating the CAGR of the amounts of cars sold in 2017 to 2019). In the case of the Americas the value became positive even though the car industry is experiencing a fall around the world, BMW is keep earning a space in the Americas region market of premium brands. Which is why the analysts consider a 70% of weight on this data for the future because it shows a similar trend that the automobile industry was following before the COVID-19.

Further, GDP growth rates were obtained by the international monetary fund. This rate continues with the 10% given by the analysts. The other 20% was obtained by the data of premium car growth in the incoming years for the industry. In this period (2022-2027) the CAGR expected is 3.11%. As observe, the methodology to forecast the sales was the same in both periods, which the exception of the first factor.

The operating expenses were calculated by the average that the company has maintained for expenses from 2014 to 2020, therefore this was use for 2021 and therefore updated with accumulated arithmetic average from the following years to keep a changing of the percentage and follow the original trend that the firm was having, which as an increase of operating expenses per fiscal year.

³⁰ Shanghai Daily " Sales of luxury cars in China rise by 9.3%" <https://www.shine.cn/biz/auto/2012292375/>

8.2. Sales

To calculate the sales for each division, a big analysis regarding to the way the COVID-19 pandemic might behave in the future for the final trimester and the 2021 was done. The analysts had to do a deep research for estimating the rate per growth for region due to the crashing of financial markets during the Q1 and Q2 around the world after the strong lockdowns that were imposed due to the COVID-19 virus.

• 8.2.1. 2020's Q4 Forecast.

For the last quarter of the current year (2020), the analysts have considered an arithmetic average of past Q4 cars sales growth since the analysts considered that it might be unrealistic to have the free opening of the economy around the world as the countries had during the summer and because the virus has registered a second and third wave across the Q4, leading into hard restrictions across Europe and America, avoiding having an economic growth as seeing on the Q3. The calculations for this number were obtained by taking the revenue by car based on the division between the revenues and the total units of cars sold. Applying the same procedure between the cost of goods sold and the number of cars sold, obtaining the cost of each car and in total the gross margin per units (helping the analysts to see the arithmetic average obtained in numbers into cost of goods sold and revenues) for the forecast of the income statement. For the rest of accounts an arithmetic average from the previous quarters was obtained since they are independent events.

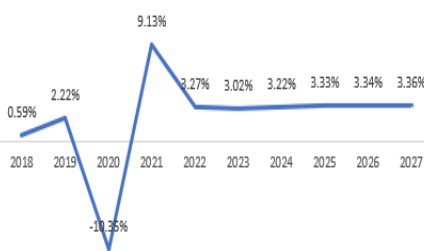
• 8.2.2. Automobile sales

The Automobile segment represents most of the revenues of the group, representing 74.14% in 2019³¹. Globally, since 2017 the automobile segment of BMW has experienced a CAGR of 1.40%, with key markets being China, Germany, and the USA. For 2020, the analysts expect sales to decline 10.4% before experiencing a growth rate of 9.13% in 2021. Moving forward, consensus estimate a CAGR for the premium car segment at 5.58%, in our view, sales of the group will be a little more conservative with a CAGR of 3.11% from 2022 to 2027 and reaching pre-pandemic levels in 2022.

Europe

Historically, Europe has been the biggest market for the automotive segment accounting ~44% of total vehicles sold. In this region, Germany is the biggest

Figure 19: Historical and forecasted BMW automobile sales growth rate globally



Source: Analyst Estimates and 2019 BMW's Report

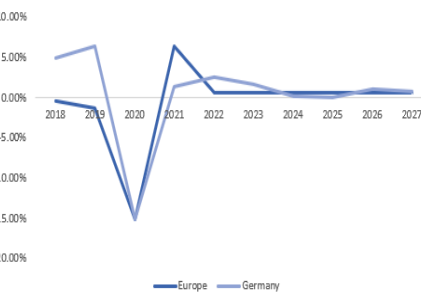
Figure 20: Historical and forecasted BMW automobile sales in units globally



Source: Analyst Estimates and 2019 BMW's Report

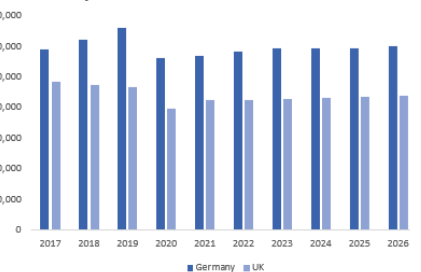
³¹ BMW Annual Report 2019: https://www.bmwgroup.com/content/dam/grpw/websites/bmwgroup_com/ir/downloads/en/2020/gb/BMW-GB19_en_Finanzbericht.pdf

Figure 21: Historical and forecasted BMW automobile sales in Europe and Germany



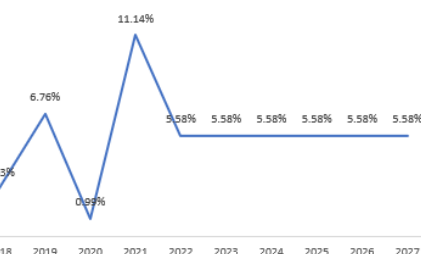
Source: Analyst Estimates and 2019 BMW's Report

Figure 22: Historical and forecasted BMW automobile sales in units in Germany and UK



Source: Analyst Estimates and 2019 BMW's Report

Figure 23: Historical and forecasted BMW automobile sales growth rate in Asia



Source: Analyst Estimates and 2019 BMW's Report

market representing 30.50% of the overall European market in 2019, followed by UK with 21.57%. Further, sales in Germany have been growing at CAGR of 5.70% since 2017, which has helped BMW to gain a market share of 27%, which is just below that one of Daimler but bigger than Audi.³²

Despite that sales in this region have been decreasing slightly since 2017, the analysts calculate for 2021 an increase of sales with an estimate grow of 6.48%, and from 2022 to 2027 sales will have a CAGR of 0.65%. It is worth mentioning that despite having growth in the following years, the estimates done by the analysts suggest that sales in this region will not reach pre-pandemic levels any time soon, and that by 2027 this region will represent ~34% of total vehicles sold. In addition, Europe is still facing high uncertainty, mainly because of the potential future result of the new Brexit deal, slow economic growth in the last decade, and increased in shared mobility combined with a probable saturated vehicle market (peak car).

Asia

Asia is the region where automobile sales have grown the most and the fastest, and its continued to present this similar trend in the future. Sales in this region represent ~37% of the total vehicles sold and since 2017 the CAGR in the region was 4.68%. By far, the biggest market in this region is China, accounting for almost 80% of the sales in this region and experiencing and outstanding CAGR of 18.89% in the last decade and 10.36% in the last three years. Currently, BMW holds a market share of 2.57% in total vehicles sold in China and 12% in the premium segment, making BMW the second premium brand in China, which is just below Daimler but bigger than main competitors such as Audi, Volvo, and Land Rover Jaguar.³³

Despite Covid-19, sales in this region and in China are expected to increase by 0.99% in 2020, becoming this the only region where BMW will experience growth.³⁴ For 2021, the analysts expect that sales in this region will experience the biggest growth between all the markets at 11.14%, and between years 2022-2027 a CAGR of 5.58% reaching approximately 1.5 million units. This will also imply that Asia is going to become BMWs biggest market accounting for 48% of total vehicles sold. Further, the fully acquisition in 2022 by €3.6 billion of BMW Brilliance joint venture could help increase and consolidate the groups market share. Potential risk in China could include an increase in protectionism by the government favoring local

³² Reuters Factbox: Global passenger car sales by luxury brand <https://www.reuters.com/article/uk-autos-suvs-factbox/factbox-global-passenger-car-sales-by-luxury-brand-idINKBN1Z924N>

³³ Marketing to China "China Luxury Cars Market Trends in 2020" <https://www.marketingtochina.com/china-luxury-cars-market-trends-in-2020/>

³⁴ Care Sales Base China "BMW Sales Data & Trends for the Chinese Automotive Market" <https://carsalesbase.com/china-bmw/>

brands, although the analysts believe this is might not be probable to occur, although politics tend to follow a path of uncertainty.

Americas

The Americas is the third largest market for BMW representing 18.63% of the overall automobile sales, and likewise China, USA accounts to almost 80% of the overall American market. Sales in the Americas region reached its peak in 2015, since then they have been growing steadily at a CAGR of 1.41%, and 1.48% in the case of the USA. Currently, BMW holds the second spot in the premium car segment in the USA with a market share of 12%, which is below Tesla, but above its European competitors. Is worth mentioning that BMW was holding the number one spot in the US market by a long time, and just in 2020 is when Tesla became number one.

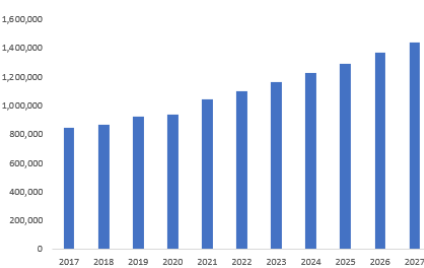
For 2021, the analysts expect sales to increase 10.09% in this region, and from 2022 to 2027 the analysts calculate a CAGR of 3.23%, reaching pre-pandemic levels by 2024 or 2025. Moreover, the analysts expect BMW to hold the second spot in the US market. Potential risk in the region comes from Tesla, where in the near term it can gain a significant market share. But although the trend is positive for Tesla, the US market its still lacking the fiscal support and infrastructure for electric vehicles. In comparison, Europe and China that has adopted these measures, Tesla market share is significantly lower.

Electric Vehicles Sales

BMW is a market leader in this segment, with the top spot in Germany and a top position globally. Since 2017 EV sales of the group have been growing at a CAGR of 19.39%, with 103,000 units sold in 2017 and 146,160 units in 2019. Currently, the EV fleet corresponds to 7.71% of the overall sales of the group, with the BMW brand being the one with higher sales.

Despite Covid-19, the analysts expect sales of EVs to finish 20% higher compared to 2019, which further confirms the high demand for this segment. For 2021, the analysts expect sales of EVs to grow 29.1%, and from 2022-2027 to grow at a CAGR of 20.99%, reaching 710,203 units in 2027, which will account to almost 24% of the overall sales of the group. Further, it is expected BMW to continue to be a market leader in this segment which is mainly explained by two things. First, given the many years of experience in the industry, the high commitment to adapt to this new environment and high expenditure in R&D, the company currently develops the motor, the power electronics, and the battery of its EV fleet. Second, although the battery packs which power the electric vehicles have fallen 87% in the last decade, electric vehicles are still expensive for the average consumer,

Figure 24: Historical and forecasted BMW automobile sales in units in Asia



Source: Analyst Estimates and 2019 BMW's Report

Figure 25: Historical and forecasted BMW automobile sales growth rate in Americas



Source: Analyst Estimates and 2019 BMW's Report

Figure 26: Historical and forecasted BMW automobile sales in units in Americas



Source: Analyst Estimates and 2019 BMW's Report

which puts the EV segment in a premium category. This will help the Company to further consolidate its market share.

• 8.2.3. Motorcycle sales

The Motorcycle segment is the smallest segment of the group, representing almost 2% of the overall revenues of the group. Despite being the smallest is the one that have experienced the highest growth with a CAGR of 6.34% since 2015. In this segment important markets are mostly Europeans with Germany (15%), France (9.9%), Italy (8.9%) and Spain (7.2%) accounting for almost 41% of total sales. For 2020, the analysts expect sales to decline 7.9% before growing 10% and reaching pre-pandemic levels in 2021. Further, for 2022 to 2027 it is expected to achieve a CAGR of 3.37%.

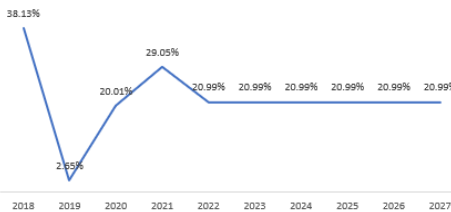
• 8.2.4. Financial services

The financial services segment is the second biggest revenue driver for the group, representing ~27% of the overall revenues of the total sales of the group. This segment main purpose is to facilitate the purchase of automobiles and motorcycles to its customers via credit financing or leases, meaning the growth in this segment its correlated with the growth in the automobile and motorcycle segment. Financial services new contracts had CAGR since 2015 of 4.88%, with a decrease of -10% expected in 2020, increase of 9.15% in 2021 (after the starting of the new normality and the markets having adapted to the uncertainty caused by the virus), before growing at a compounded rate of 3.11% until 2027.

• 8.2.5. Research & Development

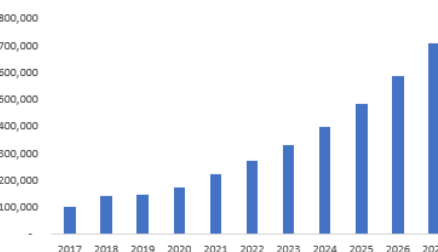
In this new constant changing and challenging environment of EVs, R&D plays a huge roll in brands adapting to these changes. Global Spending in R&D in the automotive sector has been increasing in recent years, with the European union being the number one investor with a total share of 29% of the overall R&D spending. In 2019, the EU investment in R&D increased by 6.1% to reach €60.9 Billion. Moreover, Europe is the number one creator of patents for self-driving vehicles, accounting for 33.3% of all the applications. Regarding BMW, R&D spending totalled in 2019, €6.5 Billion, which accounts for 10.54% of the EU investment in R&D. Since 2014, BMW R&D spending accounted on average 6.04% of the group revenues, which is slightly above that of the industry (5.9%). Moving forward, BMW R&D long-term target ratio is 5%-5.5% of group revenues, this translates in more than €30 billion by 2025. With that said, BMW position regarding R&D is as a market leader given the fact that BMW revenues are one of

Figure 27: Historical and forecasted BMW automobile sales in EV



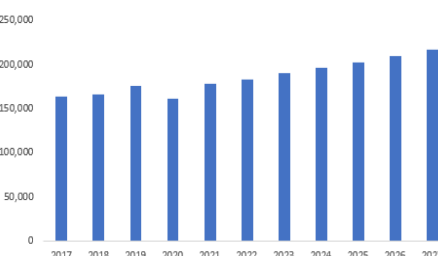
Source: Analyst Estimates and 2019 BMW's Report

Figure 28: Historical and forecasted BMW automobile sales in units in of EV.



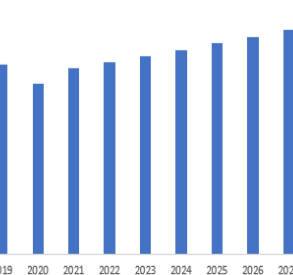
Source: Analyst Estimates and 2019 BMW's Report

Figure 29: Historical and forecasted BMW motorcycle sales in units globally



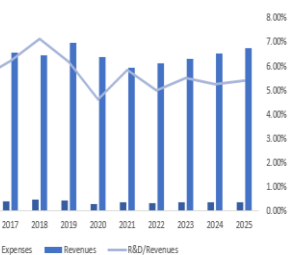
Source: Analyst Estimates and 2019 BMW's Report

Figure 30: Historical and forecasted new financial contracts



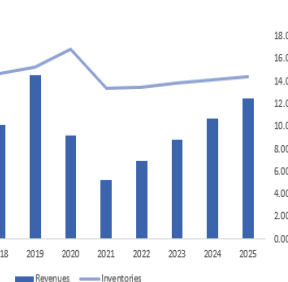
Source: Analyst Estimates and 2019 BMW's Report

Figure 31: Historical and Forecasted R&D expenses, group revenue and R&D expense as a percentage of revenue



Source: Analyst Estimates and 2019 BMW's Report

Figure 32: Historical and Forecasted group revenues and inventories as a percentage of group revenues



Source: Analyst Estimates and 2019 BMW's Report

the highest in the industry and second in the premium car segment (excluding Volkswagen since it is a combination of non-premium and premium cars).³⁵

8.3. Operating Invested Capital and Capex

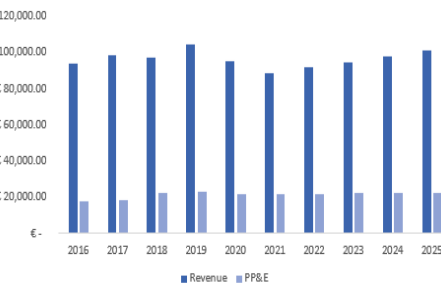
For the operating expenses, the analysts had to reformulate the financial statements according to the business unit they were analysing, the same logic applied for the first three: automobile, motorcycles, and other entities the criteria of the car industry in putting important. Accounts with important wage such as:

- Inventories which were forecasted with the percentage of inventories left in stock by revenue, then an average was calculated to get a constant behaviour in this account and continue simulating the same for the next years so the account could behave in a constant way and reflecting already the impact of increasing inventories during the lockdown that BMW had in 2020. The company is looking forward to continuing applying a restrictive budgeting, therefore inventories will be under control and as it has been mentioned during the 2020, they stopped production to avoid having an increasing of physical inventories on their plants. Since 2021 will be a decisive year for the economic recovery of this terrible crisis, the analysts estimate that the firm will continue controlling inventories for avoiding exponential increased in case the economy experience another COVID-19 lost year and keep them low to avoid an impact on their stock and eventually cash flow liquidity.

- The property, plant, and equipment which in 2020 had a decreased because the company used their assets to capitalize and avoid problems of liquidity. At the same time, this form part of the zero-base budget plan that the firm decided to do by taking a control from scratch of all the expenses and ways of budgeting, which is also one of the main factors that helped BMW to keep operating. The analysts had estimated a negative value for the 2021, since they believe that the company will keep a conservative spending according to the economic growth and improvement of their sales once the vaccine will increase possibilities for going back into the new normal successfully. For the rest of the years the analysts estimate that the company will recover confidence to obtain more assets and continue expanding operations since they have been developed new technologies that will require engineering adaptation of procedures and perhaps acquisition of machinery.

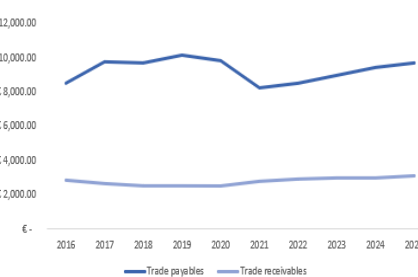
³⁵ SPENDMENOT “21+ AMAZING R&D Spenders Facts and Stats” (2020) <https://spendmenot.com/blog/rd-spenders/#:~:text=The%20technology%20hardware%20and%20equipment,of%20its%20revenue%20in%20R%26D.>

Figure 33: Historical and Forecasted group revenues and PP&E



Source: Analyst Estimates and 2019 BMW's Report

Figure 34: Historical and Forecasted group revenues and PP&E



Source: Analyst Estimates and 2019 BMW's Report

Figure 35: ESG Ranking

ESG					
	2017 Rank	2018 Rank	2019 Rank	2017 Score	2019 Score
Governance score	75.5	7	75.2	7	82.8
Environmental score	96.3	2	97.7	2	98.2
Social score	83.9	9	81.5	9	84.2
ESG score	86.1	4	85.5	3	88.6

Source: Refinitiv Eikon

• On the other hand, one of the accounts that has helped BMW to keep a good level during the pandemic has been the increasing of its accounts payables who has also been a smart move for the company to keep cash flow in high levels.³⁶

8.4. ESG

Environmental, Social and Corporate Governance (ESG) has taken a lot of strength in recent years in the decision making of investors. ESG investing has been growing exponentially in the last decade, with 11% of the share of assets managed professionally in the United States in 2012 to almost 26% in 2019, in monetary terms that is US\$3.7 trillion to US\$11 trillion. This trend is expected to keep growing reaching in 2025 50% of share of assets or US\$35 trillion. In Europe ESG investing is even more important, with ESG practices suggesting that in 2019, US\$17 trillion were allocated making Europe the biggest contributor to this practice.^{37,38}

Each pillar has its score and based on that score companies are ranked among its peers. BMW in recent years has been reducing CO2 emissions, by including a more diverse team as a strength for becoming a competitive factor and by looking forward to being one of the most attractive employers in the automotive industry. By doing this, BMW increased its ESG score from 86.07 in 2017 to 88.64 in 2019, making BMW the third Company with the highest ESG score in the industry just (below Fiat Chrysler and Daimler). Moreover, in 2019 BMW almost reach a perfect score of 100, in the Environmental pillar with a score of 98.24; ranking BMW as a second leader in the industry. By mentioning the further information, the analysts expect BMW to keep its ESG score high and continue to be in the top positions, mainly explained because of its strategies, which as it was previously stated, they have helped them to continue to be one of the most attractive employers in the automotive industry and keep reducing CO2. Including the implementation of at least 25 electrified vehicles including 13 fully electric cars by 2023 and by having 50% of its new European vehicle fleet electrified in 2030.

• 8.4.1. Summary.

The following measures demonstrate that BMW is a company, that in fact is looking for innovation and investing on it, but also it is a firm which takes certain responsibility of its financial statements and the reaction to the 2020 COVID-19

³⁶ BMW Q3 REPORT: https://www.bmwgroup.com/content/dam/grpw/websites/bmwgroup_com/ir/downloads/en/2020/q3/Q3_2020_BMW_Group_EN_Online.pdf

³⁷ Organization for Economic Co-operation and Development "ESG Investing: Practices, Progress and Challenges" <https://www.oecd.org/finance/ESG-Investing-Practices-Progress-Challenges.pdf>

³⁸ Deloitte "Advancing environmental, social, and governance investing" <https://www2.deloitte.com/us/en/insights/industry/financial-services/esg-investing-performance.html#:~:text=The%20sustainability%20movement%20is%20growing,-Social%20consciousness%20has&text=Globally%2C%20the%20percentage%20of%20both,to%2075%20percent%20in%202019.>

Figure 36: Monthly unlevered beta for BMW and competitors

Company Name	Monthly Beta Unlevered - 5 Year
Volkswagen AG	0.63
Daimler AG	0.53
Bayerische Motoren Werke AG	0.57
Volvo AB	0.73
Mean	0.613
Median	0.597

Source: Refinitiv Eikon

crisis has been a demonstration of the financial discipline that the company has. Therefore, the analysts have considered on their model a more realistic scenario where BMW will continue protecting their cashflows and at the same time looking to fulfill customer expectations in a world where the digital era and renewable energies are representing a challenge.

9. WACC

9.1. Cost of equity

• 9.1.1. BETA

For calculating BMWs Beta, the analysts use the median monthly unlevered beta of the past five years of its most comparable (number of cars sold, geographies and average car price) peers which in this case were Volkswagen, Daimler, and Volvo (BMW unlevered beta included). By using this approach, the analysts can smooth any idiosyncratic shock BMW has experienced. On the other hand, the analysts have decided to obtain the Re-levered the beta by using BMW's capital structure, for obtaining a more accurate result since debt plays an important role on the company's books, giving as a result a Re-levered Beta of 1.98 for BMW's cost of equity.

• 9.1.2. Market returns, risk free and market premium

To calculate the cost of equity for the 4 divisions, the analysts used the Capital Asset Pricing Model (CAPM). The market return was taken from the German Market, taking into consideration that it is where BMW have its Headquarters and at the same time the company has its stock at the DAX. Therefore, the analysts used a 7.08% as a market return obtained from the German market data, and for the risk free of -0.62% obtained from the 10-year bund yield. Combining these two factors leads to a market risk premium of 7.70%.³⁹

The result of both calculations taken by the analysts has been a cost of equity of 14.66%

9.2. Cost of Debt

The analysts considered the debt rate of the company taking into account the bonds for 14 years by considering the promised yield from the current debt rate ("A" by S&P despite the negative outlook considering that 2020 has been quite a

Figure 37: BMW Re-levered Beta with D/E market value and D/E with book values

Re-Levered Beta	
D/E	1.985
D/E with Book Value	2.010

Source: Analyst Estimates

Figure 38: Market return, Risk free rate and Cost of equity

Market Return	7.08%
Risk Free rate (German bund 10 year)	-0.620%
Market Risk Premium	7.70%
Cost of Equity	14.66%

Source: Market Risk Premia "Implied Market Risk Premia Germany"

Figure 39: BMW bond yield, Germany marginal tax rate and Cost of debt

BMW Bond 14-Jan-2032	0.227%
Marginal tax rate	30.80%
After tax Cost of debt	0.16%

Source: Refinitiv Eikon

³⁹ Market Risk Premia "Implied Market Risk Premia Germany" (2020) <http://www.market-risk-premia.com/de.html>

Figure 40: BMW WACC

WACC		
	2020	from 2021 onwards
D/EV	70%	68%
E/EV	30%	32%
kd with tax	0.157%	0.157%
ke	14.66%	14.66%
WACC	4.52%	4.78%
WACC Book value	4.58%	4.84%

Source: Analyst Estimates

hard year for all the sectors), therefore BMWs debt is investment-grade, meaning it shows to be stable and at the same time is puts BMW as a company that can sustain its financial obligation (as it has been have mentioned before the company is constantly investing in research in development in order to gain market share and positioned its products according to the new market demands and regulations) therefore the promised yield is a suitable proxy. This value has been obtained from BMW's longer duration bond (2032) which at the closing of this report it has been reported as 0.227%.

The marginal tax rate has been considered of 30.8%, this value could suffer modifications at the end 2021, after governments start to analyze the financial cost of the COVID-19 crisis and therefore see if the economy requires tax cuttings to stimulate the consumption of the market or as another scenario an increase for recovering resources after an economic growth. Therefore, the analysts have decided to leave a no movement scenario until the vaccinations have been massively applied and could change the position of the world for going back to the new normal without many restrictions.

The result of considering the after-tax value of the debt is 0.157%. As a result, the analysts obtained by using the previous calculations a WACC of 4.78% and 4.84% with the book values.

10. Multiples Valuation

For multiples valuation the analysts used the most comparable peers from such a big and competitive industry. Firms like Volvo, Daimler, and Volkswagen have been considered. Although the comparable list is not quite extended, the analysts believe this is the most suitable comparison for BMW. The analysts have taking into consideration factors like: the capital structure (which is quite like the firm's), numbers of cars sold, regions where they operate, and the average price of car produced.

For the analysts criteria, the best suited value of a multiple valuation lies between the price given by an Equity multiple and an Enterprise value multiple. This is because the equity multiple can overestimate the share price and the enterprise multiple can underestimate. By developing the calculation of the Equity multiple, the analysts multiplied the mean forward P/E (11.21) of the comparable by BMW EPS (€9.60) of 2021, which results in a share price of €107.64. For the Enterprise value multiple, the analysts calculate the implied BMW Group enterprise value by multiplying the median forward EV/EBIT (18.14) by BMW 2021 EBIT (€6,668.86 million), then they subtract the financial debt and add the cash and cash

equivalents, which results in the equity value (€13,436.81 million). After that, the analysts divided the equity value by its common outstanding shares (601,995,196), which yields a share price of €22.32. Afterwards, an average of the equity multiple (€107.64) and the enterprise value multiple (€22.32) was calculated, yielding a share price of €64.98, which is 19% below the share price calculated in our DCF of €77.43. In this valuation method the recommendation would be to **SELL**. (See Appendix #5)

11. Scenario analysis

With the industry going through major disruption on the near future and the Covid-19 pandemic still lingering around, it is pertinent to consider other possible scenarios. In this case, three scenarios were considered: Base case, Best case, and Worst case, with a probability of occurrence of 70%, 20% and 10% respectively. Since the automobile segment is the one that contributes to majority of the share price and most of the valuation accounts of BMW are tied to revenue and revenue is linked to cars sold, the analysts have decided to use growth for this item to estimate the share price of each scenario. The base case scenario is the one included in the mixed DCF/CFE model. For this scenario, automobile deliveries growth for 2021 is 9.13% resulting in a share price of €77.43. In the best-case scenario, Governments provide more fiscal stimulus to the economy, GDP growth is better than expected, and vaccination goes according to plan. This translates to a growth in automobiles of 10.43% in 2021 resulting in a share price of €78.72. Lastly, the worst-case scenario considers that GDP growth for 2021 is lower than expected and that the vaccination process takes longer than expected because of bureaucracy in COVAX, resulting in an automobile growth rate of 8.48% and a share price of €76.79. The expected share price considering the three scenarios is €77.63 with an expected dividend yield of 3.85%, yielding a total shareholder return of 11.32%. (See Appendix #6)

12. Summary

By mentioning the above information, the analysts have agreed that the market price of shares in automobiles should be €49.44, despite that according to McKinsey the car industry is facing a slowdown compared to previous years and moreover with this new economic recession the future of the car industry seems quite uncertain. BMW has demonstrated a strong cost discipline by cutting administrative expenses and trying to keep its liabilities in a long term (an increase in trade payables has been spotted during the Covid Crisis) and following a cut spending in different areas and selling of financial assets (which was noticeable in

a decrease in book values of property plant and equipment and also an increase in excess in cash), which is proving that BMW is looking to keep its business with a strong pace and following the recommended trends by financial institutions. Based on this the analysts have decided to keep an optimistic growth for the company, taking into account that markets like China and the United States are showing an increase in Sales despite the previous year's negative panorama, showing that the company is not correlated to the market trend of mass consuming cars focus to a medium class income, therefore the scope for future sales and innovation are showing a good growth for the company, specially the development of more electric cars which are following the new ecofriendly technology and government trends. One example of this is the fact that big cities like California in the States are planning to ban the use of combustion cars in 2035 as wells as in UK and other European countries, which following this trend will impulse sales for modern and technological cars in a niche that has the economic resources for affording this kind of goods. Which, in the case of BMW the company has been continuously investing in the development of these new ecofriendly technologies, helping the brand to get more value and better market positioning in a near future.

A similar trend is visible for the motorcycles business unit (an increase in sales), the only issue spot that is affecting the share price value of the company, is that BMW tends to avoid having cash in excess on this division, therefore the analysts assume that by doing this the firm is investing that money either increasing the motorcycle division which barely represents 2% of the total car and motorcycles sales or BMW will face in a long term that this division is just to please their specific luxury motorcycles niche but it won't be as profitable as car sales are. Which is why our estimations of future cash flows might appear negative to reflecting that BMW could use the profits of that division to finance more cars research. Having a share price of €1.41.

Other entities are the division of BMW that is considering on its books the financial entities and the other ventures that the company has, which leads to no surprise that most of the liabilities of the business are on this area and therefore it represents an essential part of the cash of the group compare to other divisions, for example financials where the balance is full of assets due to the nature of the business. Therefore, this division is sensible to changes on the beta value since part of its cashflows depend on the liabilities of these areas especially current other liabilities, which the analysts can assume due to the nature of the account and since this division does not have operating expenses it is amortizing the effects from financials where the reader can see that is the opposite case (more assets than liabilities). The share price is €39.06.

Figure 41:
BMW share price by segment and group

BMW Group share price by segments		2021
Automotive segment	€	49.44
Motorcycle segment	€	1.41
Other entities segment	€	39.06
Financial Services segment	€	(12.48)
Group Share price	€	77.43

Source: Analyst Estimates

For the financial division, the methodology implied was the FTE. The analysts estimation might be quite polemic on this field because the share price of this division is negative (considering that the firm is having revenues. After analyzing the report, the analysts arrived at the conclusion that this division is losing money because they tend to buy more capex compare to the cash generated, since they lease these cars to their customers (which represents internal sales from the company and therefore could be also a main reason of why the company has eliminations as part of its activities, this is not confirm on their reports since they do not give more information about it). Therefore, by having more assets than liabilities and by keeping investing in capital expenditures for keeping their financial services and sales to the customer on float, the firm is experiencing a loss in the value of these department, but as mentioned above and according to the description of the report there is a link between the financial and other entities, which is believe by the analysts that the effects of the liabilities are seen on the other entity's division. The share price for this segment is €-12.48.

At the end the model of the analysts estimates a share price of €77.43, this translates into a capital gain of 7.20% and a dividend yield of 3.86%, adding to a total shareholder return of 11.07% that could increase or decrease but not in a significant amount according to the results of the Q4 of 2020, since the forecast given by the analysts for the results of the Q4 is quite conservative, taking into account the new COVID-19 threats of lockdowns around Europe and high increase of cases in the Sates (one of the main markets), therefore until the vaccination and the society is quite stable the analysts do not see a potential jump on sales compare to the Q3 of 2020. For now, and until the release of the 2020 complete results, the analysts recommend **buying** the share since BMW is a stable company. Despite the negativity of this pandemic, the global markets and the society is adapting to live in the new reality, which eventually with the starting of the vaccinations process around the world and the positive trend this could bring to the market; BMW is keeping innovation as it highest and continues investing as it was mentioned before in R&D for overpass the expectations of its customers, which means that the company knows their weaknesses and strengths and therefore it is prepared for keeping increasing their portfolio in the new green career.

Figure 42:
Capital gain, Dividend yield and Shareholder return for investor

Total Shareholders return		2021
Open share price	€	72.23
Close share price	€	77.43
Capital gain		7.20%
Dividend yield		3.86%
Shareholder return		11.07%

Source: Analyst Estimates

Appendix

1. Financial Statements Automobiles

Balance sheet Automobiles									
Operating Business	Forecast								
	2020	2021 E	2022 E	2023 E	2024 E	2025 E	2026 E	2027 E	2028 E
Intangible assets	11,451.00	11,977.64	12,528.50	13,104.69	13,838.55	14,613.51	15,431.87	16,296.05	17,208.63
PP&E	21,282.00	21,119.03	21,443.26	21,707.06	21,774.02	21,899.67	22,099.56	22,266.88	22,409.14
Leased products	-	-	-	-	-	-	-	-	-
Other current assets	79.28	123.51	124.24	117.81	113.25	108.40	114.13	125.44	131.82
Inventory	14,850.00	11,046.34	11,459.88	12,109.53	12,748.47	13,328.68	13,823.51	14,285.54	14,062.64
Trade receivables	2,202.00	2,503.38	2,597.28	2,652.81	2,699.82	2,761.62	2,844.01	2,974.54	3,021.16
Other non-current assets	3,102.90	2,075.73	2,211.81	2,432.90	2,665.36	2,815.28	2,911.94	2,906.35	2,847.68
Operating cash	1,009.67	944.30	975.00	1,006.54	1,039.99	1,072.48	1,108.50	1,144.39	1,166.56
Non-current Other liabilities	(746.11)	(703.75)	(714.21)	(785.20)	(797.48)	(812.26)	(830.48)	(862.05)	(873.05)
Current tax liabilities	(435.00)	(712.19)	(685.19)	(700.37)	(721.53)	(727.95)	(722.87)	(753.96)	(799.05)
Trade payables	(8,561.00)	(7,036.25)	(7,281.38)	(7,681.78)	(8,049.37)	(8,291.03)	(8,564.58)	(8,866.40)	(8,837.53)
Non-Current Receivables from sales financing	-	-	-	-	-	-	-	-	-
Current receivables from sales financing	-	-	-	-	-	-	-	-	-
Current other liabilities	(6,580.14)	(3,568.11)	(3,869.68)	(4,238.00)	(4,637.69)	(4,953.00)	(5,146.77)	(5,264.58)	(5,001.89)
Operating Invested Capital	37,654.60	37,769.63	38,789.49	39,725.99	40,673.41	41,815.40	43,068.80	44,252.82	45,326.12
Non-Operating Business	Forecast								
	2020	2021 E	2022 E	2023 E	2024 E	2025 E	2026 E	2027 E	2028 E
Investments accounted for using the equity method	3,481.00	3,481.00	3,481.00	3,481.00	3,481.00	3,481.00	3,481.00	3,481.00	3,481.00
Other investments	321.79	234.40	242.37	250.56	259.29	267.30	276.18	285.16	287.90
Non-Current Financial assets	502.67	499.23	516.20	533.65	552.24	569.31	588.21	607.33	613.17
Deferred tax assets	1,699.50	1,539.73	1,592.06	1,645.87	1,703.19	1,755.84	1,814.15	1,873.10	1,891.14
Current financial assets	3,896.35	3,969.50	4,104.41	4,243.14	4,390.92	4,526.65	4,676.97	4,828.96	4,875.45
Current tax assets	659.00	820.01	847.88	876.54	907.07	935.11	966.16	997.56	1,007.16
Assets held for sale	-	-	-	-	-	-	-	-	-
Pension provisions	(2,687.00)	(2,687.00)	(2,687.00)	(2,687.00)	(2,687.00)	(2,687.00)	(2,687.00)	(2,687.00)	(2,687.00)
Non-Current Other provisions	(5,578.00)	(5,958.24)	(6,364.40)	(6,798.25)	(7,261.68)	(7,756.70)	(8,285.45)	(8,850.26)	(9,453.57)
Deferred tax liabilities	(89.69)	(200.69)	(207.51)	(214.53)	(222.00)	(228.88)	(236.46)	(244.14)	(246.50)
Current other provisions	(6,531.00)	(5,239.33)	(5,703.50)	(5,843.72)	(5,929.81)	(5,952.09)	(6,034.89)	(5,966.58)	(5,783.89)
Liabilities in conjunction with assets held for sale	-	-	-	-	-	-	-	-	-
Non-Operating invested capital	(4,325.38)	(3,541.39)	(4,178.50)	(4,512.73)	(4,806.78)	(5,089.44)	(5,441.13)	(5,574.88)	(6,015.12)
Financing	Forecast								
	2020	2021 E	2022 E	2023 E	2024 E	2025 E	2026 E	2027 E	2028 E
Excess cash	13,077.33	5,853.32	6,052.25	6,256.83	6,474.73	6,674.87	6,896.54	7,120.65	7,189.22
Non-Current Financial liabilities	(2,044.96)	(2,044.96)	(2,044.96)	(2,044.96)	(2,044.96)	(2,044.96)	(2,044.96)	(2,044.96)	(2,044.96)
Current Financial liabilities	(1,151.39)	(1,151.39)	(1,151.39)	(1,151.39)	(1,151.39)	(1,151.39)	(1,151.39)	(1,151.39)	(1,151.39)
Minority interest	-	-	-	-	-	-	-	-	-
Financing Assets	9,880.97	2,656.96	2,855.89	3,060.47	3,278.38	3,478.52	3,700.18	3,924.30	3,992.86
Equity attributable to shareholders of BMW AG	43,210.19	36,885.20	37,466.89	38,273.72	39,145.01	40,204.47	41,327.84	42,602.23	43,303.96
Income Statement Automobiles									
Operating Result	Forecast								
	2020	2021 E	2022 E	2023 E	2024 E	2025 E	2026 E	2027 E	2028 E
Revenue	67,311.43	62,539.80	64,665.29	66,851.12	69,179.32	71,317.73	73,686.10	76,080.65	78,813.23
Cost of Sales	(58,783.65)	(50,467.03)	(52,443.31)	(54,368.10)	(56,462.92)	(58,543.48)	(60,668.60)	(62,857.17)	(65,174.62)
S&A/E	(7,047.04)	(6,592.24)	(6,802.33)	(7,066.01)	(7,305.29)	(7,501.51)	(7,705.22)	(8,003.08)	(8,085.62)
Other operating income	902.96	(592.88)	(598.47)	(619.85)	(660.45)	(703.08)	(736.66)	(753.62)	(738.67)
Other operating expenses	(775.43)	(814.61)	(852.19)	(911.95)	(987.24)	(1,020.18)	(1,131.45)	(1,035.74)	(1,068.69)
EBIT	1,508.26	4,073.03	3,969.00	3,885.20	3,763.42	3,549.47	3,444.16	3,631.03	4,205.63
Operating Taxes	(35.24)	(1,194.68)	(1,164.17)	(1,139.59)	(1,103.87)	(1,041.12)	(1,010.22)	(1,065.04)	(1,233.58)
Profit / loss from discontinued operations	-	-	-	-	-	-	-	-	-
NOPLAT	1,473.03	2,878.35	2,804.83	2,745.61	2,659.55	2,508.36	2,433.94	2,566.00	2,972.05
Non-Operating result	Forecast								
	2020	2021 E	2022 E	2023 E	2024 E	2025 E	2026 E	2027 E	2028 E
Result from equity accounted investments	1,180.50	943.15	943.15	943.15	943.15	943.15	943.15	943.15	943.15
Interest and similar income	19.88	43.69	45.18	47.07	49.90	53.69	56.70	48.90	54.73
Other financial result	40.50	173.74	149.36	149.97	134.40	140.31	145.44	167.57	161.81
Non-Operating result before taxes	1,490.00	1,160.58	1,137.69	1,140.18	1,127.45	1,137.14	1,145.29	1,159.61	1,159.69
Taxes on Non-operating result	(167.33)	(97.00)	(105.32)	(113.07)	(110.44)	(104.05)	(98.52)	(108.92)	(106.81)
Remeasurement of the net defined benefit liability for pension plans	-	-	-	-	-	-	-	-	-
Deferred taxes	-	-	-	-	-	-	-	-	-
Marketable securities (at fair value through other comprehensive income)	-	-	-	-	-	-	-	-	-
Derivative financial instruments	-	-	-	-	-	-	-	-	-
Costs of hedging	-	-	-	-	-	-	-	-	-
Other comprehensive income from equity accounted investments	-	-	-	-	-	-	-	-	-
Deferred taxes	-	-	-	-	-	-	-	-	-
Currency translation foreign operations	-	-	-	-	-	-	-	-	-
Non Operating result after taxes	1,326.67	1,063.58	1,032.36	1,027.12	1,017.01	1,033.09	1,046.77	1,050.70	1,052.88
Financial	Forecast								
	2020	2021 E	2022 E	2023 E	2024 E	2025 E	2026 E	2027 E	2028 E
Interest and similar expenses	(139.34)	(96.70)	(150.21)	(162.95)	(167.59)	(169.02)	(138.86)	(145.89)	(154.09)
Taxes on financial result	42.92	7.58	44.06	47.79	49.16	46.64	40.73	42.79	45.20
Financial result	(96.42)	(89.12)	(106.15)	(115.15)	(118.43)	(112.38)	(98.13)	(103.10)	(108.89)
Total comprehensive income	2,703.27	3,852.81	3,731.03	3,657.58	3,558.13	3,429.07	3,382.57	3,513.60	3,916.04
Net income minority interest	15.00	17.00	17.00	17.00	17.00	17.00	17.00	17.00	17.00
Total income attributable to BMW AG	2,688.27	3,835.81	3,714.03	3,640.58	3,541.13	3,412.07	3,365.57	3,496.60	3,899.04

2. Financial Statements Motorcycles

Balance sheet Motorcycles									
Operating Business	Forecast								
	2020	2021 E	2022 E	2023 E	2024 E	2025 E	2026 E	2027 E	2028 E
Intangible assets	147.00	155.96	165.47	175.55	186.26	197.61	209.66	222.44	236.00
PP&E	387.00	408.97	432.19	456.72	482.65	510.05	539.00	569.60	601.94
Leased products	-	-	-	-	-	-	-	-	-
Other current assets	1.00	1.10	1.16	1.15	1.15	1.13	1.22	1.28	1.32
Inventory	603.00	527.42	553.27	581.63	609.36	633.39	656.75	671.97	679.21
Trade receivables	177.00	155.52	160.33	167.29	174.86	182.72	188.94	194.76	196.49
Other non-current assets	0.19	0.16	0.19	0.23	0.24	0.21	0.21	0.23	0.24
Operating cash	28.32	14.99	17.75	21.03	24.93	25.14	25.29	25.29	24.63
Non-current Other liabilities	(51.64)	(60.02)	(61.45)	(61.95)	(63.01)	(64.27)	(66.45)	(69.32)	(71.82)
Current tax liabilities	-	-	-	-	-	-	-	-	-
Trade payables	(358.00)	(327.27)	(335.47)	(354.79)	(371.30)	(385.72)	(399.55)	(408.71)	(414.53)
Non-Current Receivables from sales financing	-	-	-	-	-	-	-	-	-
Current receivables from sales financing	-	-	-	-	-	-	-	-	-
Current other liabilities	(28.61)	(18.10)	(20.95)	(23.86)	(27.08)	(29.03)	(28.40)	(28.94)	(28.15)
Operating Invested Capital	901.28	858.74	912.49	962.99	1,018.06	1,071.22	1,126.65	1,178.60	1,225.31
Non-Operating Business	Forecast								
	2020	2021 E	2022 E	2023 E	2024 E	2025 E	2026 E	2027 E	2028 E
Investments accounted for using the equity method	-	-	-	-	-	-	-	-	-
Other investments	-	-	-	-	-	-	-	-	-
Non-Current Financial assets	-	-	-	-	-	-	-	-	-
Deferred tax assets	-	-	-	-	-	-	-	-	-
Current financial assets	-	-	-	-	-	-	-	-	-
Current tax assets	-	-	-	-	-	-	-	-	-
Assets held for sale	-	-	-	-	-	-	-	-	-
Pension provisions	(90.00)	(75.00)	(75.00)	(75.00)	(75.00)	(75.00)	(75.00)	(75.00)	(75.00)
Non-Current Other provisions	(77.00)	(104.00)	(104.00)	(104.00)	(104.00)	(104.00)	(104.00)	(104.00)	(104.00)
Deferred tax liabilities	-	-	-	-	-	-	-	-	-
Current other provisions	(100.00)	(91.71)	(91.71)	(91.71)	(91.71)	(91.71)	(91.71)	(91.71)	(91.71)
Liabilities in conjunction with assets held for sale	-	-	-	-	-	-	-	-	-
Non-Operating invested capital	(267.00)	(270.71)	(270.71)	(270.71)	(270.71)	(270.71)	(270.71)	(270.71)	(270.71)
Financing	Forecast								
	2020	2021 E	2022 E	2023 E	2024 E	2025 E	2026 E	2027 E	2028 E
Excess cash	(22.32)	(10.13)	(12.00)	(14.22)	(16.86)	(17.00)	(17.10)	(17.10)	(16.65)
Non-Current Financial liabilities	-	-	-	-	-	-	-	-	-
Current Financial liabilities	-	-	-	-	-	-	-	-	-
Minority interest	-	-	-	-	-	-	-	-	-
Financing Assets	(22.32)	(10.13)	(12.00)	(14.22)	(16.86)	(17.00)	(17.10)	(17.10)	(16.65)
Equity attributable to shareholders of BMW AG	611.96	577.90	629.77	678.06	730.49	783.51	838.84	890.79	937.95
Income Statement Motorcycles									
Operating Result	Forecast								
	2020	2021 E	2022 E	2023 E	2024 E	2025 E	2026 E	2027 E	2028 E
Revenue	1,888.27	1,748.26	1,812.33	1,878.42	1,948.84	2,014.26	2,086.51	2,159.86	2,191.40
Cost of Sales	(1,536.68)	(1,422.74)	(1,413.02)	(1,472.89)	(1,533.48)	(1,589.66)	(1,653.21)	(1,715.48)	(1,734.41)
S&AE	(199.66)	(184.86)	(236.72)	(241.58)	(244.79)	(251.10)	(254.23)	(260.05)	(268.44)
Other operating income	2.13	(1.97)	(5.16)	(6.11)	(3.50)	(3.66)	(3.82)	(4.26)	(4.59)
Other operating expenses	(1.03)	(0.96)	(7.91)	(5.36)	(4.40)	(3.29)	(3.77)	(4.32)	(4.84)
EBIT	138.14	137.74	149.52	152.47	162.67	166.54	171.47	175.74	179.12
Operating Taxes	(65.37)	(42.42)	(50.20)	(52.19)	(57.38)	(57.31)	(60.55)	(63.00)	(61.27)
Profit / loss from discontinued operations	-	-	-	-	-	-	-	-	-
NOPLAT	72.77	95.31	99.32	100.28	105.29	109.23	110.91	112.74	117.85
Non-Operating result	Forecast								
	2020	2021 E	2022 E	2023 E	2024 E	2025 E	2026 E	2027 E	2028 E
Result from equity accounted investments	-	-	-	-	-	-	-	-	-
Interest and similar income	-	-	-	-	-	-	-	-	-
Other financial result	-	-	-	-	-	-	-	-	-
Non-Operating result before taxes	-	-	-	-	-	-	-	-	-
Taxes on Non-operating result	-	-	-	-	-	-	-	-	-
Remeasurement of the net defined benefit liability for pension plans	-	-	-	-	-	-	-	-	-
Deferred taxes	-	-	-	-	-	-	-	-	-
Marketable securities (at fair value through other comprehensive income)	-	-	-	-	-	-	-	-	-
Derivative financial instruments	-	-	-	-	-	-	-	-	-
Costs of hedging	-	-	-	-	-	-	-	-	-
Other comprehensive income from equity accounted investments	-	-	-	-	-	-	-	-	-
Deferred taxes	-	-	-	-	-	-	-	-	-
Currency translation foreign operations	-	-	-	-	-	-	-	-	-
Non Operating result after taxes	-	-	-	-	-	-	-	-	-
Financial	Forecast								
	2020	2021 E	2022 E	2023 E	2024 E	2025 E	2026 E	2027 E	2028 E
Interest and similar expenses	(0.73)	(0.73)	(0.73)	(0.73)	(0.73)	(0.73)	(0.73)	(0.73)	(0.73)
Taxes on financial result	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23
Financial result	(0.51)	(0.51)	(0.51)	(0.51)	(0.51)	(0.51)	(0.51)	(0.51)	(0.51)
Total comprehensive income	72.27	94.81	98.82	99.78	104.78	108.72	110.41	112.24	117.34
Net income minority interest	-	-	-	-	-	-	-	-	-
Total income attributable to BMW AG	72.27	94.81	98.82	99.78	104.78	108.72	110.41	112.24	117.34

3. Financial Statements Other Entities

Balance sheet other entities										
Operating Business	Forecast									
	2020	2021	2022	2023	2024	2025	2026	2027	2028	
Intangible assets	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PP&E	-	-	-	-	-	-	-	-	-	-
Leased products	-	-	-	-	-	-	-	-	-	-
Other current assets	1,150.71	1,197.27	1,194.03	1,182.75	1,163.37	1,241.64	1,255.49	1,272.95	1,290.41	
Inventory	-	-	-	-	-	-	-	-	-	-
Trade receivables	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Other non-current assets	5,729.93	6,567.32	7,579.61	8,769.44	9,907.60	10,941.91	11,984.30	13,067.70	14,165.32	
Operating cash	0.08	0.14	0.12	0.12	0.14	0.16	0.19	0.22	0.25	
Non-current Other liabilities	(76.81)	(65.24)	(73.61)	(74.78)	(66.26)	(74.31)	(62.89)	(60.57)	(58.25)	
Current tax liabilities	(4.00)	(66.33)	(144.06)	(174.90)	(205.55)	(241.31)	(292.69)	(340.81)	(388.92)	
Trade payables	(8.00)	(9.50)	(11.00)	(13.92)	(17.32)	(19.12)	(21.23)	(23.85)	(26.24)	
Non-Current Receivables from sales financing	-	-	-	-	-	-	-	-	-	-
Current receivables from sales financing	-	-	-	-	-	-	-	-	-	-
Current other liabilities	(3,313.46)	(3,896.30)	(4,583.68)	(5,455.22)	(6,438.13)	(7,671.61)	(8,672.10)	(10,181.97)	(11,954.72)	
Operating Invested Capital	3,480.44	3,729.36	3,963.42	4,235.50	4,345.85	4,179.36	4,193.07	3,735.68	3,029.86	
Non-Operating Business	Forecast									
	2020	2021	2022	2023	2024	2025	2026	2027	2028	
Investments accounted for using the equity method	-	-	-	-	-	-	-	-	-	-
Other investments	478.83	547.66	633.95	757.04	968.11	1,336.93	1,783.43	2,226.08	2,778.60	
Non-Current Financial assets	2,057.10	2,760.70	4,113.77	6,188.58	10,238.48	19,445.08	32,412.57	51,627.92	82,234.83	
Deferred tax assets	96.14	105.24	112.70	118.20	126.59	149.61	196.03	221.43	250.13	
Current financial assets	446.77	-	-	-	-	-	-	-	-	
Current tax assets	632.00	255.97	400.10	675.62	1,230.64	2,443.03	5,582.07	10,176.38	18,552.00	
Assets held for sale	-	-	-	-	-	-	-	-	-	-
Pension provisions	(443.00)	(498.12)	(598.58)	(705.35)	(914.95)	(1,356.98)	(1,690.71)	(2,122.03)	(2,663.39)	
Non-Current Other provisions	-	-	-	-	-	-	-	-	-	-
Deferred tax liabilities	(4.23)	(3.10)	(2.11)	(1.28)	(0.44)	0.45	1.38	2.31	3.25	
Current other provisions	(79.00)	(77.01)	(74.63)	(72.05)	(69.46)	(66.62)	(64.31)	(61.86)	(59.42)	
Liabilities in conjunction with assets held for sale	-	-	-	-	-	-	-	-	-	-
Non-Operating invested capital	3,184.61	3,091.34	4,585.13	6,960.76	11,578.96	21,951.51	38,220.47	62,070.23	101,096.00	
Financing	Forecast									
	2020	2021	2022	2023	2024	2025	2026	2027	2028	
Excess cash	740.92	838.99	844.21	978.28	1,138.34	1,269.58	1,335.68	1,434.81	1,533.94	
Non-Current Financial liabilities	(49,862.74)	(55,625.11)	(61,623.47)	(67,739.04)	(75,896.50)	(82,575.70)	(89,897.23)	(99,182.64)	(109,427.12)	
Current Financial liabilities	(14,279.08)	(14,378.94)	(14,352.20)	(14,678.14)	(14,787.19)	(15,399.73)	(15,156.49)	(15,310.33)	(15,465.74)	
Minority interest	-	-	-	-	-	-	-	-	-	-
Financing Assets	(63,400.90)	(69,165.06)	(75,131.47)	(81,438.90)	(89,545.35)	(96,705.85)	(103,718.04)	(113,058.16)	(123,358.92)	
Equity attributable to shareholders of BMW AG	(56,735.84)	(62,344.36)	(66,582.92)	(70,242.64)	(73,620.54)	(70,574.98)	(61,304.50)	(47,252.25)	(19,233.06)	
	-	0.00	0.00	-	-	-	-	(0.00)	-	
Income Stament other entities										
Operating Result	Forecast									
	2020	2021	2022	2023	2024	2025	2026	2027	2028	
Revenue	5.60	5.33	5.27	5.19	5.22	5.12	5.13	5.27	5.22	
Cost of Sales	-	-	-	-	-	-	-	-	-	
St&AE	(25.38)	(37.27)	(38.45)	(39.48)	(40.90)	(42.51)	(37.19)	(39.32)	(39.32)	
Other operating income	144.03	165.56	190.31	201.18	231.04	266.74	315.36	360.00	410.55	
Other operating expenses	(71.05)	(99.97)	(122.56)	(142.67)	(156.10)	(175.81)	(210.73)	(234.71)	(270.49)	
EBIT	92.64	33.64	34.56	24.22	39.27	53.55	72.58	91.24	105.96	
Operating Taxes	(45.22)	(11.02)	(11.36)	(7.96)	(12.90)	(17.60)	(23.85)	(30.07)	(34.92)	
Profit / loss from discontinued operations	-	-	-	-	-	-	-	-	-	-
NOPLAT	47.42	22.62	23.21	16.26	26.36	35.95	48.73	61.17	71.04	
Non-Operating result	Forecast									
	2020	2021	2022	2023	2024	2025	2026	2027	2028	
Result from equity accounted investments	-	-	-	-	-	-	-	-	-	-
Interest and similar income	100.61	90.90	81.98	68.80	54.57	19.30	(0.78)	(17.67)	(35.77)	
Other financial result	(438.00)	(508.50)	(584.08)	(671.93)	(774.25)	(894.79)	(1,007.09)	(1,101.94)	(1,200.85)	
Non-Operating result before taxes	943.50	(417.60)	(502.10)	(603.13)	(719.68)	(875.49)	(1,007.87)	(1,119.62)	(1,236.62)	
Taxes on Non-operating result	(105.68)	41.18	49.52	60.08	71.69	87.21	100.40	111.53	124.43	
Remeasurement of the net defined benefit liability for pension plans	-	-	-	-	-	-	-	-	-	-
Deferred taxes	-	-	-	-	-	-	-	-	-	-
Marketable securities (at fair value through other comprehensive income)	-	-	-	-	-	-	-	-	-	-
Derivative financial instruments	-	-	-	-	-	-	-	-	-	-
Costs of hedging	-	-	-	-	-	-	-	-	-	-
Other comprehensive income from equity accounted investments	-	-	-	-	-	-	-	-	-	-
Deferred taxes	-	-	-	-	-	-	-	-	-	-
Currency translation foreign operations	-	-	-	-	-	-	-	-	-	-
Non Operating result after taxes	837.82	(376.42)	(452.58)	(543.05)	(647.99)	(788.27)	(907.47)	(1,008.08)	(1,112.19)	
Financial	Forecast									
	2020	2021	2022	2023	2024	2025	2026	2027	2028	
Interest and similar expenses	(351.83)	(354.53)	(353.55)	(364.39)	(380.81)	(400.90)	(413.36)	(423.61)	(435.13)	
Taxes on financial result	108.36	109.20	108.89	115.88	121.10	127.49	131.45	134.71	142.72	
Financial result	(243.47)	(245.33)	(244.66)	(248.52)	(259.72)	(273.41)	(281.91)	(288.90)	(292.41)	
Total comprehensive income	641.78	(599.13)	(674.03)	(775.30)	(881.34)	(1,025.74)	(1,140.65)	(1,235.82)	(1,333.56)	
Net income minority interest	(1.50)	-	-	-	-	-	-	-	-	-
Total income attributable to BMW AG	643.28	(599.13)	(674.03)	(775.30)	(881.34)	(1,025.74)	(1,140.65)	(1,235.82)	(1,333.56)	

4. Financial Statements Financials

Balance sheet Financial Entities									
Operating Business	Forecast								
	2020	2021	2022	2023	2024	2025	2026	2027	2028
Intangible assets	381.00	382.67	384.28	385.88	387.48	389.07	390.66	392.29	393.93
PP&E	73.00	73.04	73.07	73.11	73.15	73.19	73.23	73.27	73.31
Leased products	41,831.00	33,264.64	34,793.05	36,375.01	37,760.28	39,415.74	40,923.26	42,283.71	41,973.10
Other current assets	88.01	119.84	125.14	122.06	117.90	113.68	123.82	129.17	135.56
Inventory	625.00	294.77	345.67	406.03	477.56	558.73	551.79	514.65	495.55
Trade receivables	112.00	150.88	148.85	145.65	139.55	138.91	147.76	156.84	163.77
Other non-current assets	632.98	527.74	551.59	592.54	629.03	651.20	652.84	672.97	677.93
Operating cash	392.40	369.28	380.28	391.55	402.35	415.08	428.24	441.85	448.88
Non-Current Financial assets	220.23	163.23	168.50	163.95	164.20	169.42	175.59	168.15	167.97
Current financial assets	777.89	1,298.99	1,339.40	1,369.91	1,376.48	1,365.36	1,354.16	1,360.01	1,406.30
Non-current Other liabilities	(3,947.44)	(3,560.56)	(3,694.31)	(3,834.34)	(3,941.82)	(4,079.21)	(4,196.86)	(4,361.61)	(4,389.51)
Current tax liabilities	(742.00)	(304.97)	(325.15)	(341.17)	(356.07)	(380.46)	(411.91)	(454.52)	(406.79)
Trade payables	(934.00)	(869.02)	(903.51)	(946.19)	(988.64)	(1,022.43)	(1,038.18)	(1,065.12)	(1,083.72)
Non-Current Receivables from sales financing	47,310.00	40,934.60	42,767.97	44,864.06	46,374.95	47,856.30	49,413.73	51,116.07	51,272.70
Current receivables from sales financing	35,577.00	29,071.99	30,823.83	32,604.70	34,354.20	35,986.72	36,809.63	37,599.22	37,587.64
Current other liabilities	(6,528.79)	(5,438.37)	(5,802.08)	(6,141.31)	(6,450.29)	(6,534.29)	(6,518.75)	(6,529.49)	(6,447.98)
Operating Invested Capital	115,868.27	96,484.76	101,174.59	106,231.44	110,520.30	115,117.02	118,879.02	122,497.47	122,468.63
Non-Operating Business	Forecast								
	2020	2021	2022	2023	2024	2025	2026	2027	2028
Investments accounted for using the equity method	-	-	-	-	-	-	-	-	-
Other investments	1.38	1.38	1.38	1.38	1.38	1.38	1.38	1.38	1.38
Deferred tax assets	287.36	226.10	234.44	258.37	271.57	277.48	287.85	292.62	292.81
Current tax assets	50.00	74.92	66.73	71.67	76.52	80.94	79.45	79.53	84.14
Assets held for sale	-	-	-	-	-	-	-	-	-
Pension provisions	(52.00)	(52.00)	(52.00)	(52.00)	(52.00)	(52.00)	(52.00)	(52.00)	(52.00)
Non-Current Other provisions	(83.00)	(83.00)	(83.00)	(83.00)	(83.00)	(83.00)	(83.00)	(83.00)	(83.00)
Deferred tax liabilities	(393.08)	(1,716.77)	(1,770.18)	(1,689.73)	(1,608.74)	(1,430.47)	(1,407.25)	(1,399.04)	(1,529.59)
Current other provisions	(334.00)	(334.00)	(334.00)	(334.00)	(334.00)	(334.00)	(334.00)	(334.00)	(334.00)
Liabilities in conjunction with assets held for sale	-	-	-	-	-	-	-	-	-
Non-Operating invested capital	(523.34)	(1,883.37)	(1,936.62)	(1,827.32)	(1,728.27)	(1,539.68)	(1,507.58)	(1,494.51)	(1,620.27)
Financing	Forecast								
	2020	2021	2022	2023	2024	2025	2026	2027	2028
Excess cash	2,603.60	2,426.45	2,501.94	2,579.77	2,660.02	2,742.75	2,828.05	2,915.99	2,960.05
Non-Current Financial liabilities	(17,170.30)	(17,170.30)	(17,170.30)	(17,170.30)	(17,170.30)	(17,170.30)	(17,170.30)	(17,170.30)	(17,170.30)
Current Financial liabilities	(27,569.53)	(27,569.53)	(27,569.53)	(27,569.53)	(27,569.53)	(27,569.53)	(27,569.53)	(27,569.53)	(27,569.53)
Minority interest	-	-	-	-	-	-	-	-	-
Financing Assets	(42,136.23)	(42,313.38)	(42,237.89)	(42,160.06)	(42,079.81)	(41,997.08)	(41,911.78)	(41,823.84)	(41,779.78)
Equity attributable to shareholders of BMW AG	73,208.70	52,288.01	57,000.07	62,244.06	66,712.22	71,580.27	75,459.66	79,179.11	79,068.58
Income Statement Financial Entities									
Operating Result	Forecast								
	2020	2021	2022	2023	2024	2025	2026	2027	2028
Revenue	26,159.69	24,379.72	25,138.19	25,920.22	26,726.51	27,557.78	28,414.81	29,298.36	29,741.08
Cost of Sales	(22,928.12)	(20,528.83)	(21,224.76)	(21,909.49)	(22,640.93)	(23,365.39)	(24,147.82)	(24,915.56)	(25,181.33)
S&AE	(1,295.91)	(1,396.23)	(1,427.09)	(1,463.00)	(1,491.39)	(1,527.84)	(1,562.35)	(1,616.63)	(1,665.02)
Other operating income	24.36	54.39	49.38	50.75	54.45	51.33	54.69	54.13	58.84
Other operating expenses	(50.70)	(86.60)	(83.14)	(88.69)	(88.60)	(88.22)	(87.92)	(91.77)	(97.77)
EBIT	1,418.39	2,424.45	2,453.18	2,509.79	2,560.03	2,627.66	2,671.41	2,728.93	2,855.80
Operating Taxes	(562.29)	(214.92)	(219.88)	(224.28)	(230.21)	(234.04)	(239.08)	(250.20)	(252.68)
Profit / loss from discontinued operations	-	-	-	-	-	-	-	-	-
NOPLAT	856.10	2,209.53	2,233.30	2,285.50	2,329.82	2,393.62	2,432.33	2,478.74	2,603.12
Non-Operating result	Forecast								
	2020	2021	2022	2023	2024	2025	2026	2027	2028
Result from equity accounted investments	-	-	-	-	-	-	-	-	-
Interest and similar income	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22
Other financial result	(25.50)	(25.50)	(25.50)	(25.50)	(25.50)	(25.50)	(25.50)	(25.50)	(25.50)
Non-Operating result before taxes	(22.50)	(25.28)	(25.28)	(25.28)	(25.28)	(25.28)	(25.28)	(25.28)	(25.28)
Taxes on Non-operating result	2.52	2.21	2.21	2.21	2.21	2.21	2.21	2.21	2.21
Remeasurement of the net defined benefit liability for pension plans	-	-	-	-	-	-	-	-	-
Deferred taxes	-	-	-	-	-	-	-	-	-
Marketable securities (at fair value through other comprehensive income)	-	-	-	-	-	-	-	-	-
Derivative financial instruments	-	-	-	-	-	-	-	-	-
Costs of hedging	-	-	-	-	-	-	-	-	-
Other comprehensive income from equity accounted investments	-	-	-	-	-	-	-	-	-
Deferred taxes	-	-	-	-	-	-	-	-	-
Currency translation foreign operations	-	-	-	-	-	-	-	-	-
Non Operating result after taxes	(19.98)	(23.07)	(23.07)	(23.07)	(23.07)	(23.07)	(23.07)	(23.07)	(23.07)
Financial	Forecast								
	2020	2021	2022	2023	2024	2025	2026	2027	2028
Interest and similar expenses	(1.10)	(0.72)	(0.72)	(0.58)	(0.58)	(0.53)	(0.56)	(0.61)	(0.59)
Taxes on financial result	0.34	0.22	0.22	0.18	0.17	0.16	0.17	0.19	0.18
Financial result	(0.76)	(0.50)	(0.50)	(0.40)	(0.39)	(0.37)	(0.39)	(0.42)	(0.41)
Total Comprehensive Income	835.36	2,185.96	2,209.73	2,262.04	2,306.37	2,370.18	2,408.87	2,455.25	2,579.64
Net income minority interest	79.50	49.93	49.93	49.93	49.93	49.93	49.93	49.93	49.93
Total income attributable to BMW AG	755.86	2,136.03	2,159.80	2,212.11	2,256.44	2,320.26	2,358.94	2,405.32	2,529.71

5. Multiples Valuation

BMW Group

Multiples

Source: Eikon

Date: 12/31/2020

Company Name	Forward P/E Dec-2021	Forward EV/EBIT Dec-2021
Bayerische Motoren Werke	9.07	20.16
Daimler AG	9.87	20.23
Volvo AB	14.70	13.16
Volkswagen AG	7.15	16.11
Mean	11.21	17.42
Median	9.87	18.14

Multiples Valuation			
EPS	€	9.60	
EBIT		€	6,668.86
Implied BMW Group EV		€	120,939.72
Financial debt		€	(117,940.24)
Cash and Cash equivalents		€	10,437.33
Equity Value		€	13,436.81
Outstanding shares			601,995,196
Share price	€	107.64	€ 22.32 € Expected 64.98

Aux Info		
		2021
Net income	€	5,778.88
Outstanding shares		601,995,196
EPS	€	9.60

6. Scenario Analysis

BMW'S 2021 Scenario Analysis				
BMW Automobiles deliveries growth		2021		
Region		Worst Scenario	Base Scenario	Best Scenario
Europe		2.90%	3.90%	5.90%
Americas		9.10%	10.10%	12.10%
Asia		11.40%	12.40%	14.40%
Rest of the world		12.59%	13.59%	15.59%
Overall growth rate 2021		8.48%	9.13%	10.43%
Share price		€ 76.79	€ 77.43	€ 78.72
Probability of occurrence		10%	70%	20%
Dividend yield		3.89%	3.86%	3.80%
Total shareholder return		10%	11%	13%
Recommendation		HOLD	BUY	BUY
Share price considering the three scenarios		€ 77.63		
Dividend yield		3.85%		
Total shareholder return		11.32%		

Disclosures and Disclaimers

Report Recommendations

Buy	Expected total return (including expected capital gains and expected dividend yield) of more than 10% over a 12-month period.
Hold	Expected total return (including expected capital gains and expected dividend yield) between 0% and 10% over a 12-month period.
Sell	Expected negative total return (including expected capital gains and expected dividend yield) over a 12-month period.

This report was prepared by Carlos Alberto Guevara Galarza & Darío Eduardo Nuñez Arango, a Master in Finance students of Nova School of Business and Economics (“Nova SBE”), within the context of the Field Lab – Equity Research.

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A Work Project, presented as part of the requirements for the Award of a Master Degree in Economics / Finance / Management from the NOVA – School of Business and Economics.

BMW Field Lab- Green Automobile Revolution.

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A Project carried out on the master's in finance Program, under the supervision of:

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4th January 2021

Abstract

The following report talks about the new revolution on the luxury car industry from the perspective of BMW. The new trends are focusing on development of electric and ecofriendly vehicles which can adapt to the new government and environmental requirements. This new green revolution on the market has increased the competitiveness on an industry which is already saturated and has been struggling on the past years to increase their revenues. Although the luxury cars compare to the average car manufacturers have been increasing their sales on the previous years, the industry is still facing a complex panorama where competitiveness is on its highest peak and big investments on research and development must be made.

Bayerische Motoren Werke AG has become one of the most important reference of car luxury on the industry, therefore the firm has been for more than 100 years on the market and settle as the second most important car luxury seller on the world, therefore there is no surprise to find a complex company where their financial statements are divided into four business units, each of them focusing to give the most precise information of how the company is operating. This complexity will be explored by the analysts to obtain a correct perspective of how the company will behave along the new trends that were mention before.

Some important words during this equity research are:

WACC= Weighted average cost of capital.

Revenues

R&D

Cash in.

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Table of Contents

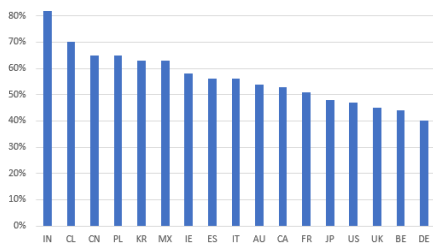
1. THE INDUSTRY	4
1.1. POWER OVER CUSTOMERS.....	4
1.2. SALES IN THE INDUSTRY.....	5
2. SWOT	6
2.1. STRENGTHS	6
2.2. WEAKNESS.....	7
2.3. OPPORTUNITIES.....	7
2.4. THREATS.....	7
3. PORTER'S STRENGTHS	8
3.1. POWER OVER CUSTOMERS.....	8
3.2. RIVALRY AMONG COMPETITORS	8
3.3. POTENTIAL OF NEW ENTRANTS INTO THE INDUSTRY	8
3.4. SUBSTITUTE PRODUCTS:	9
3.5. POWER OF SUPPLIERS.....	9
4. VALUATION.....	10
4.1. INTRODUCTION.....	10
4.2. METHODOLOGY.....	10
5.VALUE DRIVERS.....	11
5.1. OPERATING INVESTED CAPITAL	11
5.2. ESG	12
• 5.2.1. Summary.....	13
6.WACC	13
6.1. COST OF EQUITY	13
• 6.1.1. BETA	13
• 6.1.2. Market returns, risk free and market premium	13
6.2. COST OF DEBT.....	13
7. SUMMARY	14

1. The industry

1.1. Power over customers

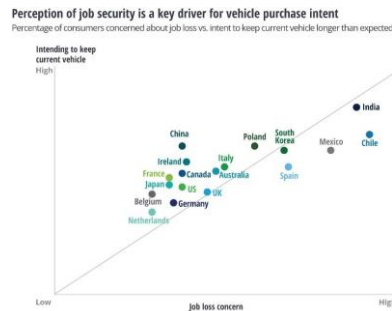
The crisis that this virus created according to Forbes magazine moved the world into a step of 5 years into the digital economy. The pandemic has pushed to a new market strategy to all companies from different sectors, making the migration to digital fields and contactless economy an important fact for company survival.

Figure 1: Global Consumers intending to push out their next vehicle purchase.



Source: Deloitte "How the pandemic is changing the future of automotive"

Figure 2: Perception of Job Security



Source: Deloitte "How the pandemic is changing the future of automotive"

Across Europe, engagement with industries through online channels has increased by an average of 13 percentage points.

More consumers are visiting a growing number of industries online in every country surveyed.

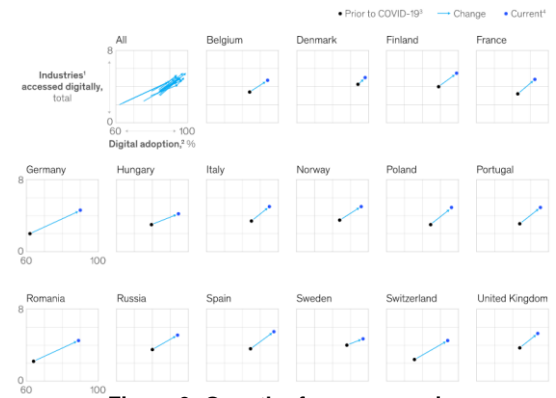


Figure 3: Growth of ecommerce in Europe during the great lockdown.

Source: McKinsey & Company "Reimagining the auto industry's future: It's now or never"

The automobile industry has not been an exception of this, since car sales have plumed in record levels the innovation had to arrive by the way of selling their products. As the reader might be aware during the lockdown business were closed, interfering with one of the most important marketing strategies of car selling: face to face interaction and contact with the product. Due to this, the car agencies as other business had to look for new marketing strategies to keep their products on float.¹ Part of this innovation has been contactless car driving test where the vehicle has passed through a disinfection process to avoid a COVID-19 infection. This form of sales will represent a high peak for cars and at the same time a business opportunity for reducing marketing and sales cost, since in a near future this contactless technology will represent a reduce of sales employees and commission, not forgetting that also digital commerce has represent a huge decrease in the ways how commerce interacts by the substitution of physical stores and staff by new market trends. As it can see on the following graph by McKinsey Therefore, car industry will evolve to this new digital era and in a not far away future evolve its traditional channels to the new market trends. But, for this to happen car companies will need to make future alliances with tech companies who could simplify the access to technology and accelerate the process.

Despite these new trends on the market, the economy is facing an incredible slowdown that has pushed consumers to think twice before buying a car, according to the study almost half of US consumers (47%) are planning to keep their current vehicle longer than they originally expected. Similar trends are being detected in other big automotive markets like China (65%), South Korea (63%), and Japan (48%).²

¹ McKinsey & Company "Reimagining the auto industry's future: It's now or never" (2020): <https://www.mckinsey.com/industries/automotive-and-assembly/our-insights/reimagining-the-auto-industrys-future-its-now-or-never>

² Deloitte "How the pandemic is changing the future of automotive" (2020): <https://www2.deloitte.com/us/en/insights/industry/retail-distribution/consumer-behavior-trends-state-of-the-consumer-tracker/future-of-automotive-industry-pandemic.html>

Another factor that will impact during the 2021 will be the job security that the market can offer to the consumers, as it is visible on the following graph this correlation will be important at the moment of forecasting sales for 2021 and 2022 which is the year that the economy is expecting to face a recovery to pre-pandemic standards, leading into a slow recovery of car sales in the world and at the same time to look for new marketing strategies even after the vaccines will be distributed along the world, this process will be slow, which will lead to a possible scenario of more restrictions after the winter and during the beginning of the spring. Since the vaccination process across Europe and America will continue until the end of the first semester of 2021.

Not everything is bad news for the industry, since also the COVID-19 has raised the interest of new consumers to acquire a vehicle after the situation becomes more stable for everyone. According to a study from Deloitte people are considering keeping maintaining the physical distance, which will lead into a consumption of more vehicles for example according to the study 79% of consumers in France, 74% in the United States, 69% in the United Kingdom, and 63% in South Korea are considering acquiring a vehicle, since they can consider a safety and hygienic measures compared with the use of public transportation or pooling. The main challenge for this trend will also be the behaviour that consumers will take now of acquiring a new vehicle, since they pockets will be hit, they might go for a used vehicle, affecting to the manufacturing of new cars.³

Besides the new sales opportunities and market disruptions, the car industry will also have to face other obstacles for their survival. The car industry is facing a green revolution, which is pushing for new alternatives for reducing car emissions to the atmosphere and traffic from big cities, where they have developed new rules to take cars that work with fuel combustion out of the roads and being substituted by carpooling services or green energy vehicles. Therefore, car companies have been pushed into a competition of developed new green technologies to keep their business moving according to the market trends and government requirements. Therefore, this could be a contrast to the pre-owned market and consumers will take the opportunity to buy vehicles that in a short term will not represent an increase in fuel consumption and taxes (caused by the government regulation).

1.2. Sales in the Industry.

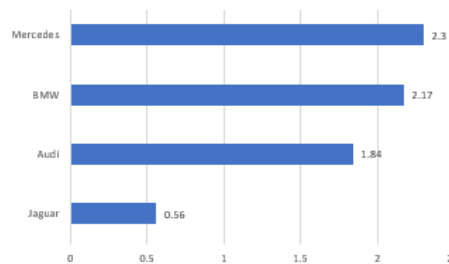
In 2019 the following companies were considered the most important luxury cars sellers on the world (Mercedes, BMW, Audi, and Jaguar). This proves BMW (only BMW cars the numbers exclude rolls Royce and mini cooper) is having an important market participation for the luxury cars selling. The firm is just above its German peer Audi and followed by its also Mercedes Benz. Showing the strength of the German producers on this special field and the trust that the consumers have for German automobile industry.

According to Bloomberg numbers the Car industry in the United States was facing a slowdown in consumption in 2018, but there was an exception to this trend. This exception was the luxury cars manufactures who were increasing their sales despite the negative panorama. Showing that car luxury tends to follow the trend of luxury goods during crisis. Even though their demand tends to be elastic, their high social class niche continues consuming them. Which makes luxury cars industry less volatile compare to regular car manufactures which are focused on a middle class that tends to be volatile to crisis and price changes. It is also noticeable how BMW in 2018 is still

³ Deloitte "How the pandemic is changing the future of automotive" (2020): <https://www2.deloitte.com/us/en/insights/industry/retail-distribution/consumer-behavior-trends-state-of-the-consumer-tracker/future-of-automotive-industry-pandemic.html>

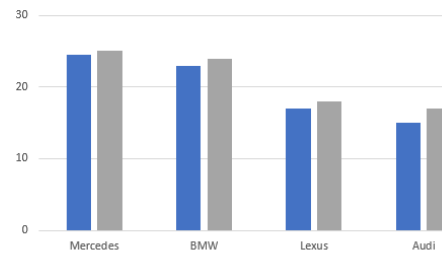
in second place for the American Market, which also contrast to the worldwide 2019 data where the company keeps being the second most consumed brand on this field. ⁴

Figure 4: Luxury sales worldwide 2019



Source: Bloomberg "Luxury Brands Are the Winners in the U.S. Auto Market"

Figure 5: Luxury sales in USA 2018 vs 2017



Source: Bloomberg "Luxury Brands Are the Winners in the U.S. Auto Market"

2. SWOT

2.1. Strenghts

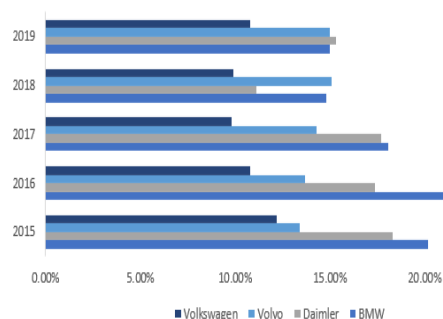
BMW is a firm that has a huge investment in innovation for its car technology. Every year the investment is around 5%-5.5% of its total revenues.

BMW is a firm with a rate of "A" for long term investments by S&P and "A2"BY Moody's, which shows that the firm is quite stable and capable of paying to its creditors their investment without financial distress.⁵

The firm has shown a growth in regions with high potential markets, like the United States and China, therefore it has a high potential market for expanding its products and technologies outside of Europe. ⁶

BMW had a powerful growth after the COVID-19 lockdown recovery in Q3, increasing its revenues after the drastically fall from of Q2 thanks to the Chinese re-opening of the company, showing the huge importance and potential growth of BMW's sales.⁷

Figure 6: Return on equity for BMW and competitors since 2015



Source: Annual 2019 BMW Report and competitors

Figure 7: Debt rating from Standad & Poors and Moodys for BMW

BMW Debt rating		
	S&P	Moody's
Long-term rating	A	A2
Outlook	Negative	Negative
Short-term rating	A-1	P-1

Source: Refinitiv Eikon

⁴ Bloomberg "Luxury Brands Are the Winners in the U.S. Auto Market" <https://www.bloomberg.com/news/articles/2018-03-01/luxury-brands-take-victory-lap-as-mass-market-auto-sales-sputter>

⁵ Reuters Eikon Platform

⁶ BMW Annual Report 2019: https://www.bmwgroup.com/content/dam/grpw/websites/bmwgroup_com/ir/downloads/en/2020/gb/BMW-GB19_en_Finanzbericht.pdf

⁷ Reuters BMW Q3 profit rebounds on china demand for luxury cars <https://www.reuters.com/article/bmw-results/bmw-q3-profit-rebounds-on-china-demand-for-luxury-cars-idUKFWN2HQ0DZ.?edition=redirect=ca>

2.2. Weakness

BMW has been doing several adjustments on its corporate structure, by reducing administrative expenses and reducing its workforce due to the current COVID-19 situation. This could be a signal for the company to maintain its cash flows after the “Great lockdown” making investors and banks taking a more conservative approach regarding the company situation.

BMW is facing a small decrease in revenues around Germany, after a profitable year in 2017 the numbers have been decreasing along.

The BMW profitability is still in positive ground, but the company has increased its expenses to make the company more competitive to the current market demands, therefore the profitability has decreased compare to previous years.⁸

2.3. Opportunities

Governments are moving into more sustainable and green economy, therefore governments around the globe have started to warn about warnings of combustion vehicles. Example: UK plans to band car combustion cars for 2030.⁹

The new normal according to McKinsey group represents a new opportunity for automobile industry to improve their distribution and sells channels. The pandemic has demonstrated the importance of having a diversifying chain supply to keep the business operating.

The new normal has pushed into a new digital revolution, according to McKinsey this could lead to a new way of selling cars outside the traditional retail sale and reducing costing of sales by having contactless driving test.¹⁰

During the time of crisis company can take a zero-based income statement, therefore firms can take a budget from scratch and put more cost controlling cost that could allow to amortize the effects of the new COVID-19 crisis and improve revenues along with cash flows.¹¹

2.4. Threats

BMW is facing a legal demand in the united states for made false and misleading statements by taking a "bank" of retail vehicle sales from its inventories and reporting it as sales when they were not.¹²

COVID 19 has let a financial crisis that has hit important markets for BMW like Europe where current lockdowns are being held down due to the current increase of infections around the continent, leading to a possible slow recovery and bad results for the end of Q4 FY20 and Q1 FY21.¹³

Car industry has been showing a decreasing historical tendency, which could be causing a problem in a mid and long term for the industry, affecting even further plans of expansion from

⁸ **BMW Q3 REPORT:** https://www.bmwgroup.com/content/dam/grpw/websites/bmwgroup_com/ir/downloads/en/2020/q3/Q3_2020_BMW_Group_EN_Online.pdf

⁹ **BBC NEWS “Ban on new petrol and diesel cars in UK from 2030 under PM's green plan” (2020)** <https://www.bbc.com/news/science-environment-54981425>

¹⁰ **McKinsey & Company “Reimagining the auto industry's future: It's now or never” (2020):** <https://www.mckinsey.com/industries/automotive-and-assembly/our-insights/reimagining-the-auto-industrys-future-its-now-or-never>

¹¹ **BMW Q3 REPORT:** https://www.bmwgroup.com/content/dam/grpw/websites/bmwgroup_com/ir/downloads/en/2020/q3/Q3_2020_BMW_Group_EN_Online.pdf

¹² **U.S Security and Exchange Commission 2020:** <https://www.sec.gov/news/press-release/2020-223#:~:text=The%20Securities%20and%20Exchange%20Commission,investors%20in%20several%20corporate%20bond>

¹³ **CNBC “Germany looks set to extend lockdown into December as infections remain high”** <https://www.cnn.com/2020/11/23/germany-looks-set-to-extend-lockdown-into-december.html>

automobile industry firm and decreasing of market share.¹⁴

Unemployment rates around the world are still in high levels, letting into a more conservative expending from customers and a more complicated social mobility, which could affect the value of BMW as an aspirational brand since consumers will tend to allocate their resources into savings or other important expenses due to the current job and wage cuts in high management positions around the world.¹⁵

3. Porter's strengths

3.1. Power over customers

BMW according to its R&D development, they have been investing in developing greener automobile technology for its customers to keep the brand as a luxury manufacturer. Focusing in reducing emissions and developing drivetrain systems. At the same time and for being a direct competitor to Tesla's autonomous driving, the company is also investing part of its R&D expenses on this field. Other strong fact from BMW to break this barrier is the overlook of customer service that the company is handling to exceed the expectations of customers, which puts BMW on the correct track for starting to gain market share in the new future of the automobile industry. A strong example of how customers have an incredible loyalty to BMW is the incredible Q3 that the company had during the 2020 pandemic, impulse by the Chinese market, this proves that despite the economic situation after the lockdown's customers tend to continue buying a solid positioned brand and that despite the economic panorama the high-income niche to whom the product is focused sees BMW as an investment worth doing. By this the analysts can show that even though BMW is losing grown on its domestic market, the complex diversity of its supply chain for supplying customers and expand the brand into new markers helps to continue with the increasing in revenues and profitability, giving BMW certain power to keep control of its prices, and making the company profitable.

3.2. Rivalry among competitors

One of the main threats of BMW for the near future is the high expenses on marketing that Tesla is having for the green technology in automobiles. A tesla care on its basic model ranks from 37k euros up to 80k, and there are plans to create a cheaper version of the cars for making this technology affordable. This new competitor to the market can represent a risk for BMW's sales as an aspirational brand since Tesla is managing a strong marketing campaign and is a market leader on the green automobile industry, causing a huge entrance barrier for other competitors since they core business is this technology

3.3. Potential of new entrants into the industry

Other companies are also developing new car technology for increasing their market share and adapt to the new government and customers' requirements. BMW has building strong barriers by developing intellectual property and continuing to patent new technology for making its products more competitive and offering to their luxury niche the most updated technology on the market, making it difficult for other companies with low sales to continue the pace of innovation or setting high standards along with tesla for penetrating this market, therefore low key car manufacturers

¹⁴ Organisation Internationale des Constructeurs d'Automobiles (2019) https://www.oica.net/wp-content/uploads/pc_sales_2019.pdf

¹⁵ NY Times "Unemployment Claims Rise as Economic Worries Grow" (2020) <https://www.nytimes.com/2020/11/19/business/economy/unemployment-claims.html>

will find a struggle to deal with the fast moving changers of the sector. At the same time BMW is having a set economy in scale with better supply chain and modernizing their plants or buying its joint ventures in countries with strong market regulations (example of this is the acquisition of the BMW branch from the state own company manufactured in china for avoiding increasing the price of manufacturing channels), this move was also a smart one for reducing the customers switching cost. Which puts BMW in china as a company that is looking forward to conquering the market. Same situation applies to Americas region, which is led by American companies, BMW has looked for ways to generate luxury cars with local supply materials and reducing exporting fees to other of its more profitable markets and keep the growing pace, which could be harder for other companies trying to expand their portfolio brand to a luxury market even harder.

3.4. Substitute products:

Cars are becoming a problem in large cities due to the increasing of population, restriction laws to reduce carbon emissions and high taxes derivate from the lack of space could lead into a problem for automobile industry and for consumers to reduce their purchase of cars and move to other more efficient mobility. Even for high income, this trend could lead to use high profile luxury cars as transportation to avoid dealing with the high taxes and lack of space.

Other products for those who are doing social class jumping could be smaller cars and cheaper electrical versions (pushed by the new green laws for reduce carbon emissions) that could help them to avoid paying the same taxes mentioned above. Other could opt to continue in big cities the movement by public transportation and other digital platforms for urban areas like: uber, DIDI, Bolt, etc.... which are quite popular among the millennial and z generations, therefore in a long term this change of habits could represent a treat to BMW, as it will be described in the valuation part of the model where it is mentioned that the car manufacturing is experiencing a decrease of sales around the world.¹⁶

3.5. Power of suppliers

BMW has a strong influence over its suppliers since is quite a big company who prefers to own its machinery instead of leasing it. At the same time, the supply chain from BMW is quite diverse, having manufacturing strategic points around the world include a recent opening of the most modern car manufacturer plant in San Luis Potosí, México. This project was developed to take advantage of the Mexican manufacturing market and free trade agreement between the three north American regions, an essential area for their sales growth. This kind of investments along with the possession of their own technology proves that suppliers have a limited effect on BMW, therefore the company cannot hardly be affected from threatening of price increasing by suppliers who would like to take an advantage as well to have additional costings for replacing suppliers who might like to increase their prices or reduce the timing of payment (pressuring the cashflow of the company). A good example of this strength over suppliers has been the incredible cost reduction that the company has done caused by the COVID-19 crisis. The company was able to reduce administrative cost and decrease the amount of its production volume to keep flowing their supply according to the demand of the market, at the same time it is noticeable that BMW increase considerably its account receivables (which can prove a power of negotiation with

¹⁶ McKinsey & Company "How shared mobility will change the automotive industry" <https://www.mckinsey.com/industries/automotive-and-assembly/our-insights/how-shared-mobility-will-change-the-automotive-industry>

suppliers to delay payments and protects its cash flows).¹⁷

4. Valuation

4.1. Introduction

For valuation purposes, the company has been divided by business units. The company has 4 business (Automobiles, motorcycles, financial and other entities) and an eliminations section. To understand the complexity of BMW financial statements is essential to understand the commercial activity of the company.

It is important to point out that BMW has an extra division for making accessible their products called “Financial Services” which consist of acquiring certain part of the volume produce for selling it to its customer by using credit financing or leasing (this is a common tactic use by some big firms who prefer to follow this to update their fleet). By mentioning this, the company uses the financial entities division as bridge between customers and the core business of the company, which is not a surprise that the firm on this area has a high value of current receivables related to sales financing and leasing (consider as core business unit due to the financial, at the same time it is important to mention that according to BMW reports an average of 50% of automobile volumes are sold throughout this method. Therefore, these amounts impact on a direct way the total value of the cash flow for this division. A similar method is used by the company on its other entities’ division, which is where the company is allocating the holding companies of the group and is where the group is allocating most of its liabilities, therefore there is no surprise to see the other entities taking a high value in cash from the other divisions that might be impact due to the nature of the BMW sales model.

Other essential point to mention before getting into the financial method use of the company is to understand the eliminations part of the firm. This part of the financial report consists of the eliminations of the internal transactions done by the company. This section is an important part of the report since on average it equals to a 16% of the total revenues and the weight of each account (from balance sheet and financial statements), therefore the allocation of these revenues had to be considered for calculating the valuation of the company, as it was mentioned before BMW tends to buy part of its sales for leasing purposes. Therefore, the value of the eliminations was distributed according to the weight of the revenues (this was the most appropriate approach since the company does not give more information related to the origin of this figures). At the same time, it is important to consider that the value of the revenues will help us to reduce the internal sales that automobiles and financials entities, reflecting on the criteria of the valuation a real value of the firms. Finally, it is essential to mention that for understanding the total value of the company, the analysts have decided to consider the share price as a total from the values obtained from each business unit. As it was mentioned above the company tends to sustain its business transactions by using every business unit as a bridge therefore the result from every BU might be under/over valued if analyzing them individually.

4.2. Methodology

Once having understood the complexity of the BMW the reader will be able to understand the financial valuation followed on this report. The firm was divided in four business units, therefore

¹⁷ BMW Annual Report 2019: https://www.bmwgroup.com/content/dam/grpw/websites/bmwgroup_com/ir/downloads/en/2020/gb/BMW-GB19_en_Finanzbericht.pdf

for automobile, motorcycles, and other entities the discounted cash flow method was chosen. This decision was taken due to the fact that these divisions (specially cars and motorcycles) require of big expenses in capital expenditures in order to operate and a huge investment in research and development in order to make their products more competitive in price and technology on the market, therefore it was essential to identify the value of the cash flows and see if BMW is keeping a moderate capex expenses according to the revenues that it generates and that this is bringing certain value and security to the company for facing financial distress. The values taken on each division were with the eliminations applied, since it is believed from the analysts criteria that this shows the correct value of the company since intercompany sales do not generate any kind of value to a firm's cash flow or business, especially financial impacts of new accounting regulations. For example, in year 2019 the reader could see in the valuation a big impact on property plan and equipment, caused by the IFRS 16 new risk transaction of leases from the lessor to the lessee, therefore the financial cost and impact of this movement was already reflected on the cash flows, showing the current situation of BMW in a near future¹⁸. (See appendix for further information)

Cash flow to equity

For the financial services segment the analysts decided to use the cash flow to equity approach for evaluating the segment. One of the main reasons for using this valuation method instead of DCF (as it was done for the other divisions) is that one of the main purposes of this sector is to provide BMW's customers a credit financing and leasing flexibility. On this scenario, most of the assets in this segment are financial and not physical (receivables from sales financing correspond to 74% of the operating invested capital in this segment). By using this method, the analysts discount using the cost of equity rather than the WACC.

5.Value Drivers

5.1. Operating Invested Capital

For the operating expenses, the analysts had to reformulate the financial statements according to the business unit they were analysing, the same logic applied for the first three: automobile, motorcycles, and other entities the criteria of the car industry in putting important. Accounts with important wage such as:

- Inventories which were forecasted with the percentage of inventories left in stock by revenue, then an average was calculated to get a constant behaviour in this account and continue simulating the same for the next years so the account could behave in a constant way and reflecting already the impact of increasing inventories during the lockdown that BMW had in 2020. The company is looking forward to continuing applying a restrictive budgeting, therefore inventories will be under control and as it has been mentioned during the 2020, they stopped production to avoid having an increasing of physical inventories on their plants. Since 2021 will be a decisive year for the economic recovery of this terrible crisis, the analysts estimate that the firm will continue controlling inventories for avoiding exponential increased in case the economy experience another COVID-19 lost year and keep them low to avoid an impact on their stock and eventually cash flow liquidity.

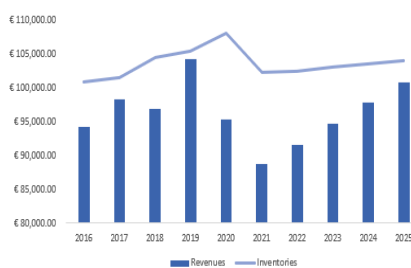
- The property, plant, and equipment which in 2020 had a decreased because the company used

¹⁸ BMW Annual Report 2019: https://www.bmwgroup.com/content/dam/grpw/websites/bmwgroup_com/ir/downloads/en/2020/gb/BMW-GB19_en_Finanzbericht.pdf

their assets to capitalize and avoid problems of liquidity. At the same time, this form part of the zero-base budget plan that the firm decided to do by taking a control from scratch of all the expenses and ways of budgeting, which is also one of the main factors that helped BMW to keep operating. The analysts had estimated a negative value for the 2021, since they believe that the company will keep a conservative spending according to the economic growth and improvement of their sales once the vaccine will increase possibilities for going back into the new normal successfully. For the rest of the years the analysts estimate that the company will recover confidence to obtain more assets and continue expanding operations since they have been developed new technologies that will require engineering adaptation of procedures and perhaps acquisition of machinery.

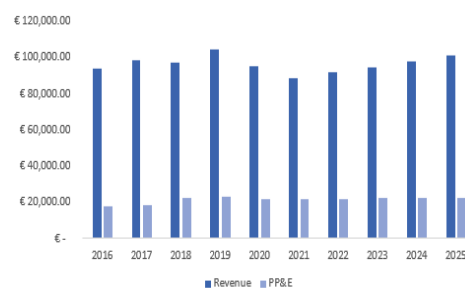
On the other hand, one of the accounts that has helped BMW to keep a good level during the pandemic has been the increasing of its accounts payables who has also been a smart move for the company to keep cash flow in high levels.¹⁹

Figure 8: Historical and Forecasted group revenues and inventories as a percentage of group revenues



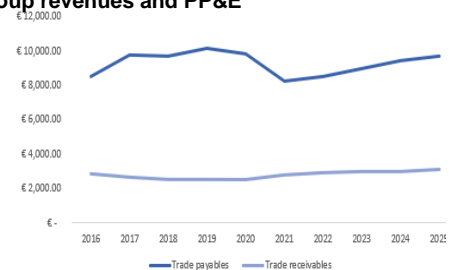
Source: Analyst Estimates and 2019 BMW's Report

Figure 9: Historical and Forecasted group revenues and PP&E



Source: Analyst Estimates and 2019 BMW's Report

Figure 10: Historical and Forecasted group revenues and PP&E



Source: Analyst Estimates and 2019 BMW's Report

5.2. ESG

Environmental, Social and Corporate Governance (ESG) has taken a lot of strength in recent years in the decision making of investors. ESG investing has been growing exponentially in the last decade, with 11% of the share of assets managed professionally in the United States in 2012 to almost 26% in 2019, in monetary terms that is US\$3.7 trillion to US\$11 trillion. This trend is expected to keep growing reaching in 2025 50% of share of assets or US\$35 trillion. In Europe ESG investing is even more important, with ESG practices suggesting that in 2019, US\$17 trillion were allocated making Europe the biggest contributor to this practice.²⁰²¹

Figure 11: ESG Ranking

ESG					
	2017 Rank	2018 Rank	2019 Rank	2017 Score	2019 Score
Governance score	75.5	7	75.2	7	82.8
Environmental score	96.3	2	97.7	2	98.2
Social score	83.9	9	81.5	9	84.2
ESG score	86.1	4	85.5	3	88.6

Source: Reuters Eikon

Each pillar has its score and based on that score companies are ranked among its peers. BMW in recent years has been reducing CO2 emissions, by including a more diverse team as a strength for becoming a competitive factor and by looking forward to being one of the most attractive employers in the automotive industry. By doing this, BMW increased its ESG score from 86.07 in 2017 to 88.64 in 2019, making BMW the third Company with the highest ESG score in the industry just (below Fiat Chrysler and Daimler). Moreover, in 2019 BMW almost reach a perfect score of 100, in the Environmental pillar with a score of 98.24; ranking BMW as a second leader in the industry. By mentioning the further information, the analysts expect BMW to keep its ESG score high and continue to be in the top positions, mainly explained because of its strategies, which as it was previously stated, they have helped them to continue to be one of the most attractive

¹⁹ **BMW Q3 REPORT:** https://www.bmwgroup.com/content/dam/grpw/websites/bmwgroup_com/ir/downloads/en/2020/q3/Q3_2020_BMW_Group_EN_Online.pdf

²⁰ **Organization for Economic Co-operation and Development "ESG Investing: Practices, Progress and Challenges"** <https://www.oecd.org/finance/ESG-Investing-Practices-Progress-Challenges.pdf>

²¹ **Deloitte "Advancing environmental, social, and governance investing"** <https://www2.deloitte.com/us/en/insights/industry/financial-services/esg-investing-performance.html#:~:text=The%20sustainability%20movement%20is%20growing, Social%20consciousness%20has&text=Globally%2C%20the%20percentage%20of%20both,to%2075%20percent%20in%202019.>

employers in the automotive industry and keep reducing CO2. Including the implementation of at least 25 electrified vehicles including 13 fully electric cars by 2023 and by having 50% of its new European vehicle fleet electrified in 2030.

- 5.2.1. Summary.

The following measures demonstrate that BMW is a company, that in fact is looking for innovation and investing on it, but also it is a firm which takes certain responsibility of its financial statements and the reaction to the 2020 COVID-19 crisis has been a demonstration of the financial discipline that the company has. Therefore, the analysts have considered on their model a more realistic scenario where BMW will continue protecting their cashflows and at the same time looking to fulfill customer expectations in a world where the digital era and renewable energies are representing a challenge.

6.WACC

6.1. Cost of equity

- 6.1.1. BETA

For calculating BMWs Beta, the analysts use the median monthly unlevered beta of the past five years of its most comparable (number of cars sold, geographies and average car price) peers which in this case were Volkswagen, Daimler, and Volvo (BMW unlevered beta included). By using this approach, the analysts can smooth any idiosyncratic shock BMW has experienced. On the other hand, the analysts have decided to obtain the Re-levered the beta by using BMW's capital structure, for obtaining a more accurate result since debt plays an important role on the company's books, giving as a result a Re-levered Beta of 1.98 for BMW's cost of equity.

- 6.1.2. Market returns, risk free and market premium

To calculate the cost of equity for the 4 divisions, the analysts used the Capital Asset Pricing Model (CAPM). The market return was taken from the German Market, taking into consideration that it is where BMW have its Headquarters and at the same time the company has its stock at the DAX. Therefore, the analysts used a 7.08% as a market return obtained from the German market data, and for the risk free of -0.62% obtained from the 10-year bund yield. Combining these two factors leads to a market risk premium of 7.70%.²² The result of both calculations taken by the analysts has been a cost of equity of 14.66%

6.2. Cost of Debt

The analysts considered the debt rate of the company taking into account the bonds for 14 years by considering the promised yield from the current debt rate ("A" by S&P despite the negative outlook considering that 2020 has been quite a hard year for all the sectors), therefore BMWs debt is investment-grade, meaning it shows to be stable and at the same time is puts BMW as a company that can sustain its financial obligation (as it has been have mentioned before the company is constantly investing in research in development in order to gain market share and positioned its products according to the new market demands and regulations) therefore the promised yield is a suitable proxy. This value has been obtained from BMW's longer duration

Figure 12: Monthly unlevered beta for BMW and competitors

Company Name	Monthly Beta Unlevered - 5 Year
Volkswagen AG	0.63
Daimler AG	0.53
Bayerische Motoren Werke AG	0.57
Volvo AB	0.73
Mean	0.613
Median	0.597

Source: Refinitiv Eikon

Figure 13: BMW Re-levered Beta with D/E market value and D/E with book values

Re-Levered Beta	
D/E	1.985
D/E with Book Value	2.010

Source: Analyst Estimates

Figure 14: BMW bond yield, Germany marginal tax rate and Cost of debt

BMW Bond 14-Jan-2032	0.227%
Marginal tax rate	30.80%
After tax Cost of debt	0.16%

Source: Refinitiv Eikon

Figure 15: BMW WACC

WACC	
	2020 from 2021 onwards
D/EV	70% 68%
E/EV	30% 32%
kd with tax	0.157% 0.157%
ke	14.66% 14.66%
WACC	4.52% 4.78%
WACC Book value	4.58% 4.84%

Source: Analyst Estimates

²² Market Risk Premia "Implied Market Risk Premia Germany" (2020) <http://www.market-risk-premia.com/de.html>

bond (2032) which at the closing of this report it has been reported as .227%.

The marginal tax rate has been considered of 30.8%, this value could suffer modifications at the end 2021, after governments start to analyze the financial cost of the COVID-19 crisis and therefore see if the economy requires tax cuttings to stimulate the consumption of the market or as another scenario an increase for recovering resources after an economic growth. Therefore, the analysts have decided to leave a no movement scenario until the vaccinations have been massively applied and could change the position of the world for going back to the new normal without many restrictions.

The result of considering the after-tax value of the debt is 0.157%. As a result, the analysts obtained by using the previous calculations a WACC of 4.78% and 4.84% with the book values.

7. Summary

By mentioning the above information, the analysts have agreed that the market price of shares in automobiles should be 49.44 euros, despite that according to McKinsey the car industry is facing a slowdown compare to previous years and moreover with this new economic recession the future of the car industry seems quite uncertain. BMW has demonstrated a strong cost discipline by cutting administrative expenses and trying to keep its liabilities in a long term (an increase in trade payables has been spotted during the Covid Crisis) and following a cut spending in different areas and selling of financial assets (which was noticeable in a decrease in book values of property plant and equipment and also and an increase in excess in cash), which is proving that BMW is looking to keep its business with a strong pace and following the recommended trends by financial institutions. Based on this the analysts have decided to keep an optimistic growth for the company, taking into account that markets like China and the United States are showing an increase in Sales despite the previous year's negative panorama, showing that the company is not correlated to the market trend of mass consuming cars focus to a medium class income, therefore the scope for future sales and innovation are showing a good growth for the company, specially the development of more electric cars which are following the new ecofriendly technology and government trends. One example of this is the fact that big cities like California in the States are planning to ban the use of combustion cars in 2035 as wells as in UK and other European countries, which following this trend will impulse sales for modern and technological cars in a niche that has the economic resources for affording this kind of goods. Which, in the case of BMW the company has been continuously investing in the development of these new ecofriendly technologies, helping the brand to get more value and better market positioning in a near future.

A similar trend is visible for the motorcycles business unit (an increase in sales), the only issue spot that is affecting the share price value of the company, is that BMW tends to avoid having cash in excess on this division, therefore the analysts assume that by doing this the firm is investing that money either increasing the motorcycle division which barely represents 2% of the total car and motorcycles sales or BMW will face in a long term that this division is just to please their specific luxury motorcycles niche but it won't be as profitable as car sales are. Which is why our estimations of future cash flows might appear negative to reflecting that BMW could use the profits of that division to finance more cars research. Having a share price of 1.41 euros.

Other entities are the division of BMW that is considering on its books the financial entities and the other ventures that the company has, which leads to no surprise that most of the liabilities of

the business are on this area and therefore it represents an essential part of the cash of the group compare to other divisions, for example financials where the balance is full of assets due to the nature of the business. Therefore, this division is sensible to changes on the beta value since part of its cashflows depend on the liabilities of these areas especially current other liabilities, which the analysts can assume due to the nature of the account and since this division does not have operating expenses it is amortizing the effects from financials where the reader can see that is the opposite case (more assets than liabilities). The share price is 39.06 euros.

For the financial division, the methodology implied was the FTE. The analysts estimation might be quite polemic on this field because the share price of this division is negative (considering that the firm is having revenues. After analyzing the report, the analysts arrived at the conclusion that this division is losing money because they tend to buy more capex compare to the cash generated, since they lease these cars to their customers (which represents internal sales from the company and therefore could be also a main reason of why the company has eliminations as part of its activities, this is not confirm on their reports since they do not give more information about it). Therefore, by having more assets than liabilities and by keeping investing in capital expenditures for keeping their financial services and sales to the customer on float, the firm is experiencing a loss in the value of these department, but as mentioned above and according to the description of the report there is a link between the financial and other entities, which is believe by the analysts that the effects of the liabilities are seen on the other entity's division.

At the end the model of the analysts estimates a share price of 77.43 euros, this translates into a capital gain of 7.20% and a dividend yield of 3.86%, adding to a total shareholder return of 11.07% that could increase or decrease but not in a significant amount according to the results of the Q4 of 2020, since the forecast given by the analysts for the results of the Q4 is quite conservative, taking into account the new COVID-19 threats of lockdowns around Europe and high increase of cases in the Sates (one of the main markets), therefore until the vaccination and the society is quite stable the analysts do not see a potential jump on sales compare to the Q3 of 2020. For now, and until the release of the 2020 complete results, the analysts recommend **buying** the share since BMW is a stable company. Despite the negativity of this pandemic, the global markets and the society is adapting to live in the new reality, which eventually with the starting of the vaccinations process around the world and the positive trend this could bring to the market; BMW is keeping innovation as it highest and continues investing as it was mentioned before in R&D for overpass the expectations of its customers, which means that the company knows their weaknesses and strengths and therefore it is prepared for keeping increasing their portfolio in the new green career.

Figure 16: BMW share price by segment and group share price

BMW Group share price by segments	2021
Automotive segment	€ 49.44
Motorcycle segment	€ 1.41
Other entities segment	€ 39.06
Financial Services segment	€ (12.48)
Group Share price	€ 77.43

Source: Analyst Estimates

Figure 17: Capital gain, Dividend yield and Shareholder return for investor

Total Shareholders return	2021
Open share price	€ 72.23
Close share price	€ 77.43
Capital gain	7.20%
Dividend yield	3.86%
Shareholder return	11.07%

Source: Analyst Estimates